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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIII; No. 1

LEHI AND SALT LAKE CITY, UTAH

AUGUST 5, 1916

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Corn and Alfalfa—A good combination.



Alfalfa, cut and uncut.

These two pictures were taken near Milford, Utah, and show the rapid development that is taking place in South Western Utah.

LEAVING THE FARM AND WHY?

Perhaps no question has been more discussed during the last few decades than the one concerning the drift of boys away from the farm. It has caused much apprehension among all classes of people, and drivers schemes have been suggested for its curtailment without apparent results. Abstract remedies have been presented, but they will not work, for they have been weighed in the balance and found wanting. Concrete remedies may do some good; they have not been tried to any great extent.

What is here meant by abstract remedies are those prescribed by a class of people who are familiar neither with farm life condition nor country-bred young men. This being the case, farm boys are misjudged; false reasons are given for their leaving the country, and superficial remedies are suggested to induce them to remain tillers of the soil.

Of course this article is not referring to future judges and statesmen who are destined to come from the farm, but to the rank and file of rural folks. Some boys are adapted to other lines of work and should follow their bent.

Most of us have read dolorous articles about the isolation and lonesomeness of the farm, just as though the theatre and cabaret were necessities of life. The majority of farm-bred youths care very little for such things and the writers of these articles are usually stating their own objections to the country, rather than those of the farm boys. The young man is pictured as leaving rural scenes because he loves excitement and high life, and plans for bringing city amusements into the country are suggested. Few farm folks care for these pleasures. As a rule, country boys are serious-minded, solid fellows and quite different from the vapid superficial city youth.

While amusements are essential and it might be said, almost necessary, they are not, in my mind at least, a vital problem of life to be worked out and regulated by the public. I believe any community can work out its own salvation regarding the entertainment proposition. Amusements will always be adjusted to the tastes of the people for whom they are intended. Trust the farmers to amuse themselves, and consider this question settled.

The young man of the country prefers, nine times out of ten, to marry and settle down in his own neighborhood. Then why does he not do so? Simply because he cannot. He is not financially able. One word will explain the exodus of young men from the farm, and that word is "necessity." This age is intensive and commercial, as well as an age of specialization, and a successful plan to conserve the farm's best crop for the farm's own absorption is one of the problems.

The writer can only tell his experiences and observations covering a period of twenty-five years, and that is just what he is doing.

The number of boys that have left several different neighborhoods recently from choice has been a little less than 12 per cent. Since we believe the right sort of boys is more of a treasure to a country than even a perfect financial system, we should not be discouraged.

The farm boy whose parents cannot give him financial backing stands small chance of being able to rent a farm,

to say nothing of buying one. Land, livestock and feed are four times as high as they were twenty years ago. That means a young man cannot get fitted up to farm for less than a thousand dollars, and all self-made farmers and business men say the hardest thousand dollars they ever accumulated was the first one. For nine months a year the boy working out on a farm may get thirty-five dollars per month, hundred per annum, and at that rate it will take five years to get that thousand. For better wages he goes to the city, becomes adjusted to new environments, saves very little and gets out of touch with farming.

This is the story of most of the young men who leave the farm, and such remedies as amusements for farmers and advice and warning to them are sounding brass and tinkling cymbals.

There is at least a partial remedy for this state of affairs, and it is what I call a concrete remedy. A system of loaning money to reliable young men at living interest rates would do wonders toward keeping them on the farm. It is to the interest of the whole country for farms to become smaller in size and greater in number. It should be this way, since as land is strictly limited in quality it must yearly become higher priced. This means that the law of diminishing returns is more quickly reached and keenly felt than when land was cheap.

Already some good has been done along the lines mentioned above and it is to be hoped that the Rural Credit Associations will be able to do effective work in conserving the best product of the farm, for he wants to stay there, and may the story of the boy leaving the farm for the city become as much a thing of the past as that of the boy running off to sea to be a sailor.

One word more regarding the so-called lonesomeness of the farm. The telephone and rural mail delivery did wonders toward relieving this monotony, but the automobile is a wonderful boon and time-saver and has almost entirely done away with it. A farmer can own an automobile and still be much poorer in this world's goods than can the man who is following some other line of work.

The automobile has been quite a factor in solving another farm problem. It cannot be denied that heretofore many girls have shown a preference for city boys. Even the underpaid, sallow-faced clerk or barber has been more popular with the girls than has the farm boy. This fact has been known to cause boys to leave the farm. Now the automobile has, to a certain extent, reversed those conditions. A farm lad can, in a season or two, save enough to buy an automobile, while a city wage earner would need to economize for years to be able to get such a luxury. The automobile is rapidly becoming a necessity to every well regulated farm and, despite the fact that critics and pessimists claim too many poor people are buying them, they are filling a long-felt want that could be supplied no other way.

Today all the good things of life are to be found on the farm, and this fact is well known to most people. With the proper adjustment of the money-lending business, the number of boys who stay on the farm will be entirely regulated by the law of supply and demand.—W. M.

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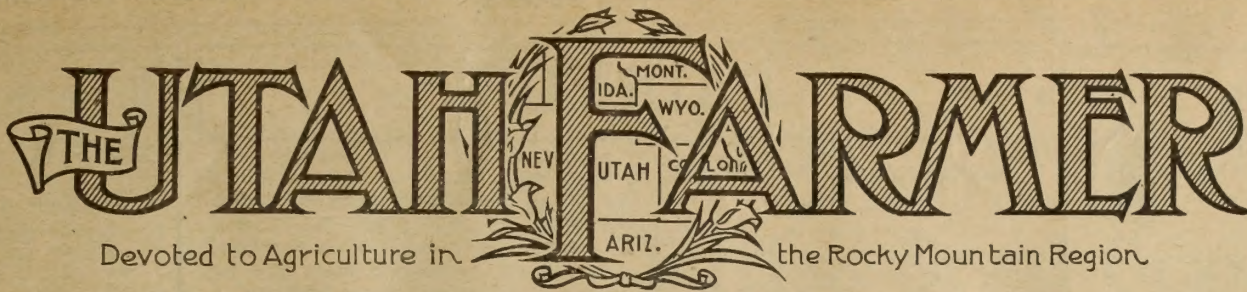
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VOLUME XIII.

LEHI, UTAH, SATURDAY, AUGUST 5, 1916

No. 1

Outline of Farm Loan Act

**Provides System for Lending Money on Farm Lands at Reasonable Interest for Relatively Long Periods—
Amortization Plan for Easy Repayment Prescribed.**

The primary purpose of this Act is to promote agricultural prosperity by enabling farmers to borrow money on farm-mortgage security at a reasonable rate of interest and for relatively long periods of time. To attain this object, two farm-mortgage systems are provided: (1) A system operating through regional land banks; and (2) a system operating through joint-stock land banks.

To attract money to the farm loan field, the Act provides a method whereby those who have money to lend can find safe investments in the form of debentures or bonds, of small and large denominations, issued by the banks and based on the security of mortgages on farm lands.

These two systems are to be under the general supervision of a Federal Farm Loan Board in the Treasury Department, composed of the Secretary of the Treasury, as chairman, ex officio, and four members appointed by the President. This Board has authority to appoint appraisers, examiners, and registrars, who will be public officials.

The Federal Land Bank System.

Under the Federal land bank system the Act provides for Federal land banks which make loans, for the first twelve months, exclusively through local national farm loan associations composed of borrowers. These associations shall be shareholders in the banks and in that way the members, who are the borrowers, will share in the profits of the bank. The money for the loans is to come partly from the capital of the banks and partly from the sale by the banks of bonds secured by first mortgages on farm lands. The Act defines strictly the purpose for, and the conditions under, which loans are to be made, and requires that the rate of interest charged on farm loans shall not exceed 6 per cent per annum.

Twelve Federal Land Banks.

The United States shall be divided into 12 farm loan districts and a Federal land bank with a subscribed capital stock of not less than \$750,000, each share \$5, shall be established in each district. Each Federal land bank may establish branches in its district. Within thirty days after the capital stock is offered for sale it may be purchased at par by anyone. Thereafter, the stock remaining unsold shall be bought by the Secretary of the Treasury for the United States. It is provided, however, that the Government shall not receive any dividends

on its stock. Ultimately, it is intended that all the stock in the banks shall be owned by the associations of borrowers, and provision therefore is made in the law for transferring the original stock at par to these associations.

National Farm Loan Associations.

The Act provides for the creation of local national farm loan associations through which it is contemplated that the Federal land banks shall make their loans. In the event that a local loan association is not formed in any locality within a year, the Federal Farm Loan Board may authorize a Federal land bank to make loans on farm land through approved agents. Ten or more persons who own and cultivate farm land qualified as security for a mortgage loan under the Act, or who are about to own and cultivate such land, may form such an association, provided the aggregate of the loans desired by the membership is not less than \$20,000. Each member must take stock in his association to an amount equivalent to 5 per cent of the amount he wishes to borrow. This stock the association holds in trust as security for the member's individual loan. The association, in turn, when applying for money from the bank, must subscribe for stock in the bank to an amount equivalent to 5 per cent of the sum it wants to obtain for its members. This stock is held in trust by the bank as security for the loans it makes through the association. If a prospective borrower has no money with which to pay for his association stock, he may borrow the price of that stock as a part of the loan on his farm land.

Under this plan, then, every borrower must be a stockholder in his local association, and every association a stockholder in its district bank. Each stockholder in an association is liable for the acts of that association up to twice the amount of his stock.

How Loans are Obtained.

A member of a national farm loan association, before obtaining a loan, must first fill out an application blank supplied to the loan association by the Federal Farm Loan Board. This application blank and other necessary papers will then be referred to a loan committee of the association which must appraise the property offered as security. Such application as is approved by the loan committee is then forwarded to the Federal land bank and must be investigated and reported on by a salaried appraiser of the

bank before the loan is granted. This appraiser is required to investigate the solvency and character of the prospective borrower as well as the value of his land. When a loan is granted the amount is forwarded to the borrower through the loan association.

Conditions Under Which Loans May be Obtained from Federal Land Banks.

The Act specifically defines the purposes for which loans may be obtained. These are:

"(a) To provide for the purchase of land for agricultural uses.

"(b) To provide for the purchase of equipment, fertilizers and live-stock necessary for the proper and reasonable operation of the mortgaged farm; the term 'equipment' to be defined by the Federal Farm Loan Board.

"(c) To provide buildings and for the improvement of farm lands; the term 'improvement' to be defined by the Federal Farm Loan Board.

"(d) To liquidate indebtedness of the owner of the land mortgaged, existing at the time of the organization of the first national farm loan association established in or for the county in which the land mortgaged is situated, or indebtedness subsequently incurred for one of the purposes mentioned in this section."

Loans may be made only on first mortgages on farm land.

Only those who own and cultivate farm land or are about to own and cultivate such land are entitled to borrow.

No one can borrow save for the purposes stated in the Act and those who after borrowing do not use the money for the purposes specified in the mortgage are liable to have their loans reduced or recalled. The secretary-treasurer of each association is required to report any diversion of borrowed money from the purposes stated in the mortgages.

No individual can borrow more than \$10,000 or less than \$100.

No loan may be made for more than 50 per cent of the value of the land mortgaged and 20 per cent of the value of the permanent insured improvements upon it.

The loan must run for not less than five and not more than forty years.

Every mortgage must provide for the repayment of the loan under an amortization plan by means of a fixed number of annual or semiannual installments sufficient to meet all interest and pay off the debt by the end of the term of the loan. The installments required will be those published in amortization tables to be

prepared by the Farm Loan Board.

The bank is given power to protect itself in case of default by recalling the loan in whole or in part or taking other necessary action.

The Interest Rate Paid by the Borrower.

No Federal land bank is permitted to charge more than 6 per cent per annum on its farm mortgage loans, and in no case shall the interest charged on farm mortgages exceed by more than one per cent the rate paid on the last issue of bonds.

For example, if the bank pays only 4 per cent on an issue of bonds, it can not charge more than 5 per cent for the next farm loans it makes.

Out of this margin of not to exceed 1 per cent, together with such amounts as it can earn on its paid-in cash capital, the bank must set aside certain reserves and meet all its expenses. Any balance or net profits can be distributed as dividends to the loan associations or other stockholders. The loan associations, from their bank dividends, after setting aside the required reserves and meeting expenses, can declare association dividends to their members. In this way the profits, if any, will be distributed among the borrowers and will, to that extent, reduce the amount of interest actually paid by them.

Restriction on Fees and Commissions.

The Federal Land Banks are specifically prohibited from charging in connection with making a loan any fees or commissions which are not authorized by the Farm Loan Board. The authorized fees need not be paid in advance but may be made part of the loan.

Amortization Plan of Repaying Loans.

It has been said that all loans are to be repaid on the amortization plan. This plan calls for a number of fixed annual or semiannual payments, which include not only all interest and charges due the bank, but the principal as well. These payments are so calculated as to extinguish the debt in a given number of years. After five years the borrower has the right on any interest date to make additional payments on the principal in sums of \$25 or any multiple thereof, thus discharging the debt more quickly.

The table given below illustrates how a loan of \$1,000 bearing interest at 5 per cent would be retired in 20 years by an annual payment of \$80.24. A study of the columns shows how from year to year the interest is reduce land the proportion of the pay-

(Continued on page 6)

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Save the machinery! Get more years—more service from your farm machinery by using—

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It is refined especially for farm machinery. There's nothing smoother, cooler or more dependable for mowers, binders, rakes, plows, threshers and all other farm machinery. Ask your dealer for this efficient oil.

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1912	\$3,200,000
1913	3,800,000
1914	4,500,000
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July, 1916	6,500,000



**AN INCREASE OF
\$3,300,00, MORE THAN
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SALT LAKE CITY

DAIRYING

ADVANTAGES OF DAIRYING

R. Q. Tenney.

The average cow in the United States is capable of producing 140 pounds of butter a year. As some cows give over a thousand, and many from 300 to 600 yearly, the reader is invited to imagine the depths of scrubberly to which a large number of cows descend.

These unprofitable animals are sometimes called "boarders." The term is inaccurate for they never pay for their keep—they just loaf and eat.

Average cows and loafers are in most cases the daughters of scrub sires, whereas the profit-producers represent bred-for-production families.

It would be interesting to know why so many smart farmers keep unprofitable cows. The mystery is partly cleared up when we remember there is a principle that is a bar to all human progress, which is proof against all argument and cannot fail to keep a man in everlasting ignorance and this principle is unreasoning prejudice prior to investigation. All farm papers, colleges of agriculture and county advisors in the world might show a man of unreasoning prejudice that he is losing money on poor cows and it would have as much effect as waves dashing against a granite cliff.

From the above facts it would seem that some cow-owners make money, while others do not. The man with a few cows might buy or raise more if he realized the true value of high-class stock in the production of milk. With such cows you can make a pound of butter as cheaply as you can grow a pound of beef. One sells for thirty cents and the other for nine cents.

Another advantage of dairying is that it brings in a steady income throughout the year. You harvest corn and wheat once a year. You harvest milk twice a day and turn it into ready cash.

Nothing the farmer raises will maintain the fertility of the soil as surely as products of the dairy. Butter is made from the starch and oil in corn and other feeds. Starch and oil are manufactured by plants from the carbon-dioxide of the air and not from the land while a ton of wheat sold off the farm takes out \$7 worth.

The cow-owner does not have to live near large cities, nor on high-priced land. He can do almost as well at a distance from markets on account of the low freight rates on butter in comparison to its value. A car load of grain is worth \$250 while a car load of butter is worth \$5,000. It costs nearly as much to haul one as the other. By converting corn into butter you save the freight on nineteen cars.

The man who sells milk usually gets more per cow than if he made butter. One of the reasons for this is that milk is largely water but this has nothing to do with the old joke about the pump handle. A quart of ordinary milk weighs 34 ounces and is composed of water 87.34 per cent; butter-fat 3.6 per cent; casein 3.8 per cent; sugar 4.5 per cent; mineral ash, .7 per cent.

As the solids in milk are highly

nutritious and easily digested, milk is a cheap food at ordinary retail prices. At eight cents a quart it is more economical than most foods at prevailing prices, corn-meal, flour and potatoes being among the exceptions.

The farmer who declines to bother with exact rations, can get fairly good results by feeding all the legume roughage (clover, alfalfa, etc., a cow will eat, and a pound of grain for each three pounds of milk she gives per day. A balanced ration would be 10 pounds of clover hay, 25 pounds of silage, 4 pounds of bran, and 4 pounds of corn-chop for a cow giving 25 pounds of 3½ per cent milk a day.

There is profit in keeping choice cows and a purebred bull of a prominent dairy breed; by observing cleanliness from milk-pail to marketing; by raising all feed on the place and returning all manure to the land without waste; by superior skill in manufacturing dairy products and by using clever salesmanship in disposing of the output. Profits are increased by breeding thoroughbred cattle for sale.

Nothing has value until labor is applied to it. The more brains and work you mix with the raw materials of the field, the higher priced will your ultimate product be. No kind of farming offers better chances for prosperity than by turning alfalfa hay into gilt-edged butter and selling it direct to discriminating consumers.

DRIED BEET PULP—

HOW TO FEED IT

The enormous increase in consumption of dried beet pulp within the past few years seems to offer conclusive evidence as to its value to the dairyman and stock feeder—or at least to show that there is reason for the many things that are said about this succulent, vegetable feed.

Dried beet pulp is simply the natural root of the sugar beet, shredded clean and pure, with only the sugar and water extracted. Within an hour from the time the sugar beets enter the sugar factory the dried beet pulp is in the sacks, dried, and ready to be loaded on the cars. You will thus see that there is no possibility of its souring, and the drying process is so thorough that the pulp will keep indefinitely for almost any length of time like grain or any other mill feed.

The great value of dried beet pulp lies in the fact that it meets the vital necessity for a bulky, palatable and succulent feed, and aids the digestion of the entire ration in which it is included because it makes the whole lose and bulky. In the western states dried beet pulp is fed principally with alfalfa, the combination making a balanced ration—but it is also used in combination with many other rations.

"Shall I feed it dry or wet?" is a question that is frequently asked—and it can only be answered by the individual experience of each feeder. It is just as good one way as the other. Let the cows decide it for you. They'll soon tell you which way they like it best. When you first start to use it, try feeding it wet—if soaked beforehand the actual amount of water used is immaterial—and you will probably find that the cows like it better that way than they do dry. After they have become accustomed to it you can

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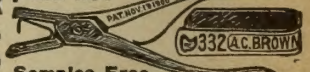
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gradually switch over to the dry feeding if you find it advisable.

"How much shall I feed?"—is another question that is frequently asked, and that also is something for each feeder to determine for himself by keeping a careful record of each cow. For an average cow of about 1000 pounds weight—giving from 25

to 30 pounds of milk daily—feed about 8 to 10 pounds of pulp (weighed dry) and from 18 to 20 pounds of good alfalfa hay for roughage, or as much hay as the cow will clean up thoroughly. Give the beet pulp first, dividing the amount into two feedings. As dried beet pulp contains between 65 and 70 per cent digestible carbohydrates, the ration recommended above would supply approximately 2½ pounds of digestible protein and about 14 pounds of digestible carbohydrates, which is the amount of digestible nutrients required for the average dairy cow.

It might be wise to displace a pound or two of pulp with an equal amount of grain or mill feed, for the sake of variety. These are points that can best be settled by each feeder.

FEEDING KINDNESS I. D. O'Donnell.

A corn-belt farmer on being asked what he fed his milch cows, replied, "Corn and roughness." It is an unfortunate fact that on many farms roughness is administered to the livestock out of proportion to the needs of the animals. The roughness may be supplied through the medium of a milk stool, boot toe, whips, dogs, and "cuss" words, either or all. In any event it unbalances the ration and the livestock is not a source of profit.

I have a friend who is undertaking to raise hogs on quite a large scale as a new venture. The men employed on the ranch are not accustomed to hog raising and have not been overly partial to the "mortgage lifters." Just a few days ago the owner saw one of the men abusing a valuable brood sow and the man was promptly "fired." The owner then made the incident the subject of a lecture to the remaining men, and he told them in effect that he was running a hog ranch and not a man ranch; that he expected to make his profit out of the hogs and if the stock was abused his profit was lost and the ranch a failure. He was right.

You may figure out the best mixture of grain and forage and provide the best shelter for your stock, but unless you mix in a goodly proportion of kindness you are not going to get maximum returns. If you don't like livestock, don't try to raise livestock; you will be miserable and so will the animals. If you have to beat the cow with the milk stool before you can settle down to milking, there is no use of you weighing the milk and applying the Babcock test to see whether the cow is profitable—she can't be profitable, and it is not the cow's fault, either. If your hogs are so distrustful of you that you have to get some one else to call them, you won't make money raising hogs. If your horse trembles and shrinks when you come near, it is a sure sign the horse has been in bad company.

One of the biggest of the condensed milk companies advertises that it sells milk produced by "contented cows." I like to trade with people who keep contented cows. It pays to keep the livestock contented. Size up your neighborhood and you will see that the man whose livestock is willing to stay at home is making money out of that livestock, while the man whose stock will go through any kind of a fence to get away from home condemns livestock because it doesn't pay.

Be kind to the pigs, colts, calves, and lambs, and you will have livestock

easy to handle and economical to keep. On some farms there is no such thing as "breaking" horses. The colts are handled from birth and they never dispute the authority of the owner. Feed a little kindness; you will enjoy it as much as the livestock. Kindness with stock has the same effect as "taffy" and blarney with men—it will get the desired results where "roughness" would start a riot. Feed kindness.

KEEP COWS WELL FED C. H. Eckles.

During the hot weather of July and August the milk flow of the average herd drops down nearly half. The heat and the conditions of the pastures common at that time of the year are the main causes of this drop. The flies generally blamed are of much less importance than other conditions. The real cause is the failure of the animals to eat sufficient feed. Poor pastures, heat and flies may all contribute to this result. It will be observed that during the hot weather the cows will graze but little and come to the barn at night evidently hungry. To produce three gallons of milk a day a cow has to gather at least 100 or 125 pounds of grass. If the pastures are short and the weather hot, generally this much grass will not be gathered and soon the milk flow goes down.

The influence of these summer conditions cannot be removed but may be improved. The main thing is to see that the cows do not lack food. They should be in the pasture at night and during the earliest, coolest part of the day. If the pasture is short feed silage or green crops. It is well known to all experienced with dairy cattle that when the milk flow goes down once for lack of feed it is impossible to bring it back to where it was before by better feeding later. To get a high production of milk during the year the cow must be kept at a high level of production all the time. For this reason do not neglect the cows during the hot weather and expect them to come back strong again when conditions become better in the fall. Keep them going all the time.

MOULDY SILAGE IS FOUND TO POISON STOCK

From experiments conducted at the Illinois Station it has been found that mouldy silage has caused a great many deaths to horses and cattle. Experts have studied results of feeding mouldy silage for some time. They have visited farms where poisoning has been reported. They have conducted experiments on mice, pigs, rabbits and chickens, thus far these animals have not given a positive test.

Several horses were bought for experimental purposes and fed with mouldy silage. Four days after feeding, symptoms of poisoning showed themselves. On the sixth day, one horse died and within a period of three weeks three more horses died. The remaining horse will undoubtedly die too.

It is apparent from these experiments that farmers are not justified in trying to economize by feeding horses and cattle silage that has become spoiled.

A CHEERING LETTER

"Your letter came. Glad you bought

FARMERS

Saved More Than

A MILLION DOLLARS

By Storing In

Butler Steel Grain Bins

Last Year



RAT PROOF—It is impossible for you to figure up with pencil and paper the amount that you have lost by the destruction of grain by rat and mice.

FIRE PROOF—Insurance money saved will help you pay for a steel bin.

WEATHER PROOF—It is impossible for rain or snow to beat in when properly set up.

BURGLAR PROOF—This gives special value. The extra large door can be securely locked so that theft is impossible.

NEW IMPROVEMENTS **GET DESCRIPTIVE BOOKLET**

Consolidated Wagon and Machine Co.

UTAH-IDAHO-WYOMING-NEVADA

a pair of horses. Hilda is sick. She has diphtheria, and she will die, I think. Clare died this eve. She had it, too. We are quarantined. Five of Fisher's family have got it. My wife is sick. She hasn't got it. If this thing gets much worse we may have to get a doctor. Them trees is budding good. Everything is O. K."

THOSE IRRITATED

WESTERN STATES

On the train going through the Western States to the Coast, a little

old lady became dreadfully bored by the unending acres of alfalfa.

"Now ain't this land the limit," she finally observed to a neighboring traveller; "All they can raise is alpaca, and they have got to irritate that!"

NEW TECHNICAL TERM

B'ue—What's the technical word for snoring?

Jay—I bite.

Blue—Sheet music.

OUTLINE OF FARM LOAN ACT

(Continued from page 3)

ment which goes to discharge the principal steadily increases. The final payment cancels the debt.

Annual periods.	Total annual payment.	Interest at 5 per cent.	Paid on prin. cipal.	Amount of principal still unpaid.
1.....	\$80.24	\$50.00	\$30.24	\$969.76
2.....	80.24	48.48	31.75	938.00
3.....	80.24	46.90	33.34	904.67
4.....	80.24	45.23	35.01	869.66
5.....	80.24	43.48	36.76	832.90
6.....	80.24	41.64	38.59	794.31
7.....	80.24	39.71	40.52	753.79
8.....	80.24	37.68	42.55	711.23
9.....	80.24	35.56	44.68	666.56
10.....	80.24	33.32	46.91	619.64
11.....	80.24	30.98	49.26	570.39
12.....	80.24	28.51	51.72	518.67
13.....	80.24	25.93	54.31	464.36
14.....	80.24	23.21	57.02	407.34
15.....	80.24	20.36	59.88	347.46
16.....	80.24	17.37	62.87	284.60
17.....	80.24	14.23	66.01	218.59
18.....	80.24	10.93	69.31	149.28
19.....	80.24	7.46	72.78	76.50
20.....	80.33	3.83	76.50	.....
Total.....				1,604.89
				604.81
				1,000.00

Funds Available for Loans.

After a Federal land bank has loaned on first mortgage \$50,000, it can obtain permission from the Farm Loan Board to issue \$50,000 in farm bonds based on these mortgages, sell such bonds in the open market, and use the money thus obtained to lend on other mortgages.

This process of lending on mortgages and selling bonds in issues of \$50,000 may be repeated until bonds to the amount of twenty times the bank's paid-up capital are outstanding. If each bank should have only its required minimum paid-up capital of \$750,000, this plan will provide eventually, if all the authorized bonds of the 12 banks are sold, over \$180,000,000 to lend on first mortgages on farm land. The banks, however, can increase their capital stock above the required minimum and so increase the amount of bonds they can sell, and thus increase the total amount of money available for loans on farm mortgages.

To make these bonds attractive to investors, the bonds, together with the mortgages upon which they are based, are exempted from Federal, State, municipal, and local taxation and are made legal investments for fiduciary and trust funds. The capital stock of the Federal land banks is also exempt from taxation. Federal reserve banks and member banks of that system are impowered to buy and sell these bonds. They are to be issued in denominations of \$20, \$50, \$100, \$5.0, and \$1,000.

Organization of Banks.

The temporary management of the federal land banks is to be in the hands of five directors appointed by the Federal Farm Loan Board. As soon, however, as the subscriptions from the loan associations total \$100,000, regular directors are to be appointed as follows: Three district directors, resident in the district, shall be appointed by the Federal Farm Loan Board to represent the public interest, and six local directors, resident in the district, shall be elected by the farm loan associations who must be stockholders in the bank. The Federal Farm Loan Board shall designate one of its appointees to act as chairman. The Act requires that at least one of the three district directors shall be experienced in farming and actually engaged at the time of his appoint-

ment in farming operations within the district. Any compensation paid to the directors must be approved by the Federal Farm Loan Board.

Officers of Loan Associations.

Each loan association must have a board of directors and a secretary-treasurer. The directors shall serve without pay. The secretary-treasurer shall receive such compensation as may be determined by the board of directors. The association must appoint an appraisal committee for the purpose of valuing lands offered as security for loans. No member of such committee shall have any interest in the property upon which he passes.

Funds for Current Expenses.

To provide funds for current expenses, the loan association may retain as a commission form each interest payment not to exceed one-eighth of 1 per cent semiannually upon the unpaid principal of the loan. This commission is to be deducted from the dividends payable to such farm loan association by the Federal land bank. If the commissions are not adequate, and an association does not wish to assess members for current expenses, it may borrow at 6 per cent from the federal land bank to an amount not to exceed in the aggregate one-fourth of its bank stock.

Reserves and Dividends.

The law requires both the land banks and the farm loan associations to make provision for certain reserves before they can pay any dividends.

Agents of Land Banks.

In sections where local conditions do not make the formation of associations practicable, the Farm Loan Board may authorize the Federal land bank to make loans through agents approved by the board. These agents are to be banks, trust companies, mortgage companies or savings institutions, chartered by the State. They may receive as compensation the actual expense involved in transacting the loan and in addition there to a sum not to exceed one-half of one per cent per annum on the unpaid principal of the loans made through them. When the Farm Loan Board decides that a locality is adequately served by farm loan associations, no further loans are to be made through agents.

Joint-Stock Land Banks.

In addition to the system of 12 Federal land banks and the national farm loan associations of borrowers, the Act permits the establishment of joint-stock land banks and authorizes them to carry on the business of lending directly to borrowers on farm mortgage security and issuing farm loan bonds. These banks must have a capital of not less than \$250,000. They are under the supervision of the Federal Farm Loan Board, but the Government does not lend them any financial assistance.

The joint-stock land bank is free from many of the conditions imposed on the Federal land banks. Subject to the 50 to 20 per cent value limitation and the limitation as to territory, the joint-stock land bank may lend more than \$10,000 to a single individual, and it is not restricted to making loans for the purposes specified in the case of the Federal land bank.

The joint-stock bank, like the Federal land banks, cannot charge an interest rate on farm mortgages in excess of 6 per cent, nor shall such interest rate exceed by more than 1 per cent the rate of interest paid by the

LIBERTY AND SERVICE

In 1776 the people of this country threw off the shackles of kingly rule and proclaimed themselves free from the domination of any foreign king, prince or potentate.

One hundred years later Alexander Graham Bell invented the telephone which was destined to free the people from the unsatisfactory coach-and-four methods of communication.

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bank upon its last issue of bonds. A joint-stock bank is limited in the bond issue to 15 times its capital and surplus.

Among the restrictions placed on these banks under the Act are (1) that their mortgages must provide for an amortization system of repayment such as is prescribed in the case of loans through the Federal land banks, and (2) that they shall in no case demand or receive under any form or pretense any commission or charge not specifically authorized by the Act and approved by the Farm Loan Board.

The bonds of the joint-stock land banks are exempted from taxation. Their capital stock, however, is not exempted.

General Provisions.

The law, through the Farm Loan Board, provides the necessary machinery for frequent examinations of the banks and the associations, for the proper cancellation of mortgages, and for the safe custody of mortgages offered as security for bonds. When any mortgage offered as security for bonds is withdrawn, the bank is required to replace the security with other mortgages or with other satisfactory collateral.

Heavy penalties of fine or imprisonment, or both, are imposed for violations of the Act, malfeasance in office, fraud, embezzlement, defalcation, or other illegal practices.

HOW TO PROTECT ROSE BUSHES FROM THE ROSE APHIS

A. D. Hopkins.

When new growth starts on the rose bushes in the spring, and throughout the summer and fall, the young growth and the flower buds and stems of rose bushes are often covered with a small green or pinkish plant-louse, known as the rose aphis, which sucks the sap from the tender portion of the plant and causes an unhealthy curled condition of the foliage and disappointment in the number and quality of the flowers produced.

The rose aphis passes the winter in the egg stage on the stems and dormant buds of the rose bushes. The insects hatching from these eggs reach maturity in about 15 to 20 days, all being wingless. They are pear-shaped and either bright green or pinkish in color. At this stage they begin to produce living young, each individual in course of about 20 days producing 50 to 100 young, which, on maturity are either winged or wingless and in turn either green or pinkish. Thus the tender growth soon becomes crowded with various sizes, colors, and shapes of aphides, and, to insure their progeny with an adequate food supply, the wingless mothers migrate to less crowded growth and the winged ones fly to other rose bushes, each starting a colony for herself. In favorable weather conditions, especially in a humid atmosphere, many generations may thus follow one another, covering every bit of green vegetation on the bush with their bodies, their cast skins, honeydew, and the resulting sooty fungus. It can easily be seen that, had every aphis produced in the course of a season lived its full life, the progeny of a single overwintering egg would run into millions.

The presence of ants on the rose bushes is an indication that the aphides is present, because the ants collect the honeydew from the aphides and,

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to a certain extent, protect the aphides from their insect enemies.

Natural Control.

As above indicated, the rose aphis thrives best in cloudy, humid, warm atmosphere, hence with the appearance of a hot and dry spell they often disappear as suddenly as they appeared.

Aside from a variety of causes, like driving rains, winds, etc., which decimate its numbers considerably, the rose aphis is attacked by other insects which either devour them or develop from eggs deposited in their bodies. Ladybirds, lacewing flies, and the larvae of two-winged flies called syrphus flies are among the former and a number of species of tiny wasp-like insects represent the internal parasites. Sometimes these natural agencies of control are sufficient to keep the aphides so reduced in numbers that they do little or no harm. Notwithstanding the effectiveness of natural checks, however, their intermittent character unfortunately renders their help often too late to save the flower crop. It is always advisable, therefore, to watch rose bushes for aphides and to apply remedies as soon as they are discovered.

Remedies.

Fortunately the rose aphis readily succumbs to artificial methods of control and with the different styles of spray pumps on the market, there is no excuse for allowing roses to suffer from these insects.

The simplest, most commonly used, and often quite effective remedy is to turn a fine but forceful stream of water on them by means of the garden hose. Applied often enough this gives satisfactory results.

Solutions of fish-oil or cheaper grades of soap are often useful as a prompt remedy. The soap is used at the rate of 1 pound to 4 gallons of water. To make the solution, shave the soap into the water and dissolve by heating, adding enough water afterwards to make up for evaporation.

The best remedy for the rose aphis is 40 per cent nicotine sulphate (a liquid which can be purchased in most seed stores) diluted at the rate of 1 part to 1,000 to 2,000 parts of water, with fish-oil soap or laundry soap added at the rate of 1 pound to 50 gallons of the spray mixture. The simplest way to prepare the spray in small quantities and secure satisfactory proportions of the ingredients is to put 1 teaspoonful of the nicotine sulphate in from 1 to 2 gallons of water and then add one-half ounce of laundry soap. One spraying is usually 100 per cent effective, but if the first application has not been thoroughly made, a second one may be necessary.

In order to prevent the possible development of mildew as a result of frequent spraying it is advisable to make the applications in the early morning so that the spray will dry off the plants promptly.

The spraying device to use depends on the amount of spraying necessary. A cheap atomizer, such as can be bought in any seed store, is quite satisfactory for small plants and gardens. Good knapsack and barrel pumps are available for commercial growers.

— 0 —

If you get into unnecessary trouble, people would say, "It's too bad." But that's about all they'd do for you.



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We guarantee every subscriber against loss thru dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

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How about your farm machinery is it under cover, protected from the hot sun and rains? It is an expensive practice to leave machinery unprotected.

AWARDS FOR UTAH

According to a report just filled with Governor Spry, Utah won twenty-eight awards at the two coast expositions last year. Practically all of the awards were for agricultural exhibits, and are gold and silver medals. The report also shows that it cost this state \$101,549.86 to erect buildings, collect and maintain exhibits, and for general and traveling expenses.

DIM YOUR LIGHTS.

When an automobile meets another car, a horse and buggy, or a team, the driver of the car should dim his lights for safety's sake.

It is a wonder to us that more accidents do not occur on our roads at night, when one has to face those blinding and dazzling headlights. Don't be a selfish driver, but meet the other fellow half way, and dim your lights.

Nearly all cars are now equipped with dimming devices, so there is no excuse, and people who will not dim their lights should be exposed. In some places there is a law compelling drivers to do this. Why not use "safety first" and dim your lights when passing others on the road?

SHEEP ON THE FARM

For a long time the Utah Farmer has advocat-

ed and emphasized the importance of having a few sheep on the farm. For a number of reasons it seems that this year will be a good one in which to make a start. Each year the ranges that have been used by the sheepmen is being restricted, and it is reported that thousands of good ewes will be offered for sale. The prices for these sheep seem very high, but we believe that if they are properly taken care of they will be a good investment for the farmer, even when these high prices prevail. We do not recommend buying the culls, but sheep of a standard grade, or better still, pure bred, if you are able to buy them.

WHY LIVESTOCK?

The domestication, and raising of animals represents one of the leading phases of agriculture. Today it is indicated by the general prosperity that is found on farms where the raising of livestock is a part of the work. In figuring on the increased cost of raising livestock, we are inclined to forget the specific benefits that come from it. It retains the fertility of the soil, thus preventing any decrease in the value of the land. It is a very good way to make use of the waste products, thus increasing the annual income. It makes a distribution of the labor over the year, giving the farmer and his help something to do all the time. It interests young people, because they like to work with, and develop better livestock. It brings better returns for the amount of labor and time spent than possibly any other branch of farming.

FEDERAL MONEY FOR ROADS

After deducting three percent for administering its provisions, the Secretary of Agriculture apportioned the first year's Federal money for good roads among the different states in this way:—one-third in the ratio of area, one-third in the ratio of population, and one-third in the ratio of mileage of rural delivery routes and star routes.

Under this apportionment, Utah's share is \$56,950.15 to be used by the end of the fiscal year, June 20th, 1917.

Next year double this amount will be available—the following year three times that amount, and the next year four times the amount, and the fifth year five times the amount of the first year. The exact apportionment will be made each year. This amount, though small, will help in our road building.

BUILD GOOD BRIDGES

Bridges that were "good" only a few years ago are not the kind to build today. Heavy machinery, such as threshers, engines, plows, etc., are being used today by our farmers. They have to be taken from place to place and often a serious accident will happen when they attempt to go over poorly constructed bridges. With only a little additional cost these same bridges could be made stronger. The single proposition of laying the planks the right way is a big aid in bridge building.

If a bridge of any considerable size is to be built, why don't you write to the Agricultural College, or the State Road Engineer for plans and helpful suggestions?

When you build bridges over irrigation ditches, make them strong enough to hold up a big load. Do this for your own, as well as your neighbors protection.

RURAL CREDITS LAW

In this issue we give a review of the Rural Credits Law. While to some this law appears a little top heavy, and may fail to meet all of the requirements of true co-operation; it is a good law and once it is in working order, it will be very helpful to the West.

We must not expect wonders from this bill, but if the farmers will get together and organize, it will help to solve one of the big problems that every farmer must meet in this country—the question of farm loans.

This bill provides for long time loans to be paid off with amortization payments, and this will be a vast improvement over the frequent renewals that have been necessary when borrowing from the local banks.

The rate of interest will be very materially reduced to what a great majority of farmers have been obliged to pay.

Altogether one hundred eighteen rural credit bills have been before congress, and the present one is a result of trying to harmonize all these different fractions for a farm mortgage system. It should help the farm struggling against odds to secure money at a low rate of interest, that will help to make improvements, to buy new equipment, and help make farming a profitable business.

Farmers must organize local associations in order to avail themselves of the borrowing privilege under the land bank law—except in isolated cases where organization is impossible. It is important, therefore, that farmers acquaint themselves thoroughly with the provisions of the law. Write to one of our senators or representatives and get a copy of the bill.

WILL FIGHT WEEDS

The Farm Bureau of Weber County are to be commended for the action they have taken in requesting the Board of County Commissioners to enforce the weed law. They have had printed a little folder in which appears a copy of the weed law, also a way to fight the Canada Thistle, Bull Thistle, Burdock, and Cocklebur.

The County Road Commissioner, is ex-officio weed inspector, and he has sent to all parties interested, a copy of this folder. The law says that "Every person, company, or corporation, owing controlling, or occupying, lands in this state, once each year, and oftener if required, as hereinafter provided, shall destroy all weeds known as thistles, burdocks, cockleburs, and all other weeds that may be designated as hereinafter provided."

The law also says "That every person, company, or corporation owning the right of way for a reservoir, dam, canal, ditch, or any kind of an open artificial water course, located or running through either private or public property, for conveyance or conservation of water for general irrigation purposes, shall once a year, or oftener, cut down all noxious weeds." Railroads shall clear its right-of-way. The County Commissioners are to clear the county roads, and the cost of doing it is to be paid by the county.

How many counties are enforcing the law for the fighting of weeds?

Twenty-five of the land owners of the county can petition the County Commissioners to appoint a weed inspector, who will then see that the law is enforced. If the law is not being enforced in your county, get busy. Help fight the noxious weeds. There is no excuse for delay. Right now is the time to act, before the seed is ripe.

LIVE STOCK

THE BROOD MARE

The colts of America are bred on the farms in numbers of one to half a dozen and do not come from herds as is the case with cattle and sheep. Colt raising is, therefore, the farmers' problem.

It is probable that in the fall the percentage of well developed and healthy foals as compared with mares available for breeding is not above fifty. Much can be done to raise this percentage by patronizing a properly handled virile stallion and by sending the mares to him at the right times. Likewise much can be done by proper care and feeding of the mares, since the care and development of the foal should start long before he is born.

The two most common mistakes are the keeping of the mare so low in flesh that she has not the vitality to carry and deliver a strong vigorous, fully developed foal and the keeping of her in high flesh with little exercise. Feeding and exercise spell the difference between success and failure in horse breeding. The brood mare after safely in foal should be fed with the purpose of maintaining her in medium flesh—neither fat nor thin. The hay may be wild hay, timothy, or alfalfa. The most common mistake in feeding hay is where alfalfa is available and abundant. In that case the mare is often permitted to stuff herself with one and one-half to two times as much as she needs. The stable is flooded with dark colored urine and the elimination of the excessive nitrogen carried by the alfalfa is an unnecessary tax during the period of pregnancy.

The common mistake in grain feeding is to withhold it altogether. If the animal is working she should have some grain. Oats is foundational in horse feeding and can be well used alone especially when the hay consists of alfalfa or clover. Bran mixed with the oats or fed separately once or twice per week assists in keeping the digestive system and intestines in good working order.

Exercise is necessary and the best way to give it is in the collar and under harness. The in-foal mare may be safely worked to within a week or ten days of foaling. The work should not be such as to necessitate strains or excessively heavy pulling.

A brood mare fed a medium ration of the feeding stuffs mentioned, kept in medium flesh and given plenty of exercise will ordinarily have little trouble in foaling and will bring forth a healthy, vigorous, and active offspring.

The foal's start in life is all-important and is dependent directly on heredity and the feeding and care of the dam.—E. J. Iddings, Idaho A. C.

TAKE CARE OF YOUR COLTS

E. A. Trowbridge.

Horse and mule colts suffer more from heat and flies during July and August of their first year than at any other time. During these two months many plump, well-developed, smooth-haired youngsters become thin, potbellied, listless and begin to show staring coats. In this condition they are likely to be weaned in September and perhaps before they have become thrifty again they are put on a scant supply of dry winter feed. Such set backs cut profits seriously.

Colts from work mares should be kept in the barn or lots while their mothers are in the field and should not be turned in with their mothers if the mares are warm immediately on their return from the field at noon or in the evening. They should be kept separate until the mothers are thoroughly cooled.

The colts should be eating grain and a little grass or hay by the first of July and if they have not yet learned to eat grain, a clean mixture of equal parts of crushed oats, ground corn, and bran should be placed in a trough where they can get it at any time. The lots should have plenty of shade and if the colts are kept in the stable, the stalls should be partially darkened, taking care not to shut out the breezes or free circulation of air. If flies cause much trouble, hang up old burlap bags where the colts can walk under them and scrape the flies off their backs and sides. Proper care may make a difference of from \$10 to \$40 in the value of the colt at weaning time and these inexpensive methods should be used to increase the owner's profits as well as to make the colt do better.

FALL PIGS GIVE

A GOOD PROFIT

Some interesting figures showing profit in the feeding of fall pigs for pork production, have been gathered from experiments conducted by R. C. Ashby of Minnesota.

Eleven pigs, farrowed early in October, were weaned December 24. From the time of weaning until they were sold the pigs had free access to self-feeders, receiving therefrom corn, shorts, oil meal, and tankage. These feeds were kept separate and each pig made its own selection. No milk was fed. The test closed May 23, after 145 days, the weight of the group having increased from 410 pounds to 2243.3 pounds. The hogs were sold after the close of the test for \$6.95 per cwt.

In the course of the test the eleven pigs ate 6613 pounds of shelled corn, 386.5 pounds of shorts, 230.5 pounds of oil meals, and 505 pounds of tankage. Charging the shorts at \$26, oil meal at \$36, and tankage at \$50 per ton, the supplemental feeds cost \$21.79, and the value of the net gain made was \$127.40, leaving a balance of \$105.61 to cover the cost of corn, labor, etc. If all this is credited to corn it gives 89 cents per bushel as the price paid for the corn by the hogs.

An interesting feature of this experiment was the selection of feeds made by the pigs. The total period was divided into four sub-periods, the first of seven weeks, from December 24 to February 16; the second of two weeks, from February 16 to February 28; the third of three weeks, from February 28 to March 23; and the fourth of nine weeks, from March 23 to May 23. The percentages of each of the feeds to the total ration are shown in the following table:

	First Period	Second Period	Third Period	Fourth Period
Corn	68.45	76.46	83.64	92.37
Shorts	10.85	4.24	5.43	3.18
Oil meal	9.45	10.28	2.90	0.07
Tankage	11.24	9.00	8.01	4.36

It is worthy of notice that shorts were eaten only in small amounts after the first period, and practically no oil meal was eaten after the first nine weeks.

Each 56 pounds of mixed feed produced 13.27 pounds of pork.

EVERYBODY IS MY FRIEND

Everybody is willing—anxious—to do things for me, because I am as willing and anxious to make them want to. Everybody responds to the right sort of thought, influence and consideration—all of which I am glad to give as compensation for what is done for me; before it is done. Everybody is my friend.

Desire to help others is as much natural law as gravitation, and in as forceful as electricity. Like electricity, it has its positive and its negative. If I receive only negative consideration, that is the kind I attracted. The secret is not in other persons, but in me. I generate and attract as I generate.

Everybody is my friend, because it is part of my day's duty to attract friendship. I can't conceal the purpose of my thoughts. My mind uses every move, every word, everything in every one of my actions as a medium to reveal itself.

My friendship-producing thought starts inside—and it radiates outward. Hence, I am not surprised that everybody is my friend. That is as I intended it should be.

Everybody is friendly to me because I generate confidence—partly through my enthusiasm and partly through my earnest ambition to succeed.

My batteries can be charged up to the brim, and they can be kept charged with ambition, determination and honesty.

The heavier their charge, the more friendship-building power I can give out—even to those who greet me with the inclination to be unfriendly.

Everybody is my friend, because I believe in everybody,—want to see everybody prove trustworthiness.

I regard friendship as a result—and myself as a cause.—Exchange.



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Double Service Tires are made double the thickness of the best standard make tires.

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These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—the air space and pressure being the same.

They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service tires are in use in the U. S. government and European War service.

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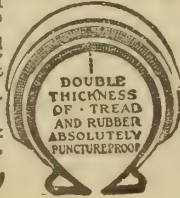
Tires Tubes	Tires Tubes
30x3 in. \$ 8.60 \$2.30	36x4 in. \$17.45 \$4.65
30x3 1/2 in. 10.85 3.10	36x4 1/2 in. 21.20 5.60
32x3 1/2 in. 12.75 3.20	36x4 3/4 in. 22.50 5.75
32x4 in. 15.75 4.20	37x4 1/2 in. 23.50 6.20
34x4 in. 16.70 4.35	37x5 in. 26.30 6.40

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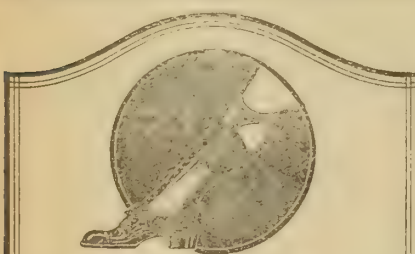
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Fits smoothly—does not bind, slip or let go. Will not injure the hose. Light, easy and comfortable. Get the garter that gives the greatest satisfaction—ask for the "Boston."

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Last season, made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Ask for

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Sold by dealers, or 6 cent by express, prepaid, \$1.00.

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THE HOME

CANNING—HELPFUL SUGGESTIONS

Program for Home Economics Associations.

Suggested Topics:

August being the height of the canning season, demonstrations with discussions of methods and results would be helpful. It is also the month when the question of clean milk for babies is of the utmost importance.

September is the month when mothers are preparing children of all ages for school. Talks and discussions on suitable clothing for school wear would be in order. These would be especially valuable if accompanied by a demonstration on fitting, cutting, and remodeling.

We offer the following as guides to the foregoing subjects:

Preservation of Food. Means: Sterilization or the killing of germ life by means of scalding heat.

Bacteria, microbes or germs, are invisible plants found in the air and on all objects exposed to the air.

What affects them. a. Temperature: Cold delays growth. Heat moderate, about 70 to 95 degrees causes quick growth; scalding heat destroys germs. Direct sunlight destroys germs.

b. Food: Sugar, starch, and flesh forming foods, such as meat, eggs, (proteins) provide food for germs. Moisture increases their growth. Acids destroy germs.

Methods of Killing Germ Life: Direct Sunlight, Heat wet or dry, Pickling, and Chemical Powders.

Sun Drying: For those who prefer this method the following furnished by an Association member at Castle-dale may be useful: Place fruit or vegetable to be dried in a dripper and set in a moderately hot oven. Allow to steam for an hour. Put on racks made of fine screening, cover with a cloth to protect from flies and other dirt and allow to remain in direct sunlight for a day, turning often.

Boiling: Material to be canned may be boiled before placing in jars, but must be steamed after bottling to insure the killing of any germs that may have entered during the bottling process.

Steaming: The fresh material is packed in jars and steamed, the time varying according to the composition of the food and the style of equipment used.

Pickling is accomplished by the use of salt, vinegar, spices and oil.

Chemicals: Certain chemicals destroy germs, but a substance which is strong enough to destroy germ life will in the end affect human life injuriously. There are canning powders on the market but they all contain certain acids that are injurious. Dr. Wiley, the Food Expert, describes their use as a lazy method of canning.

General Rules for Canning Applicable to all Methods.

1. Cleanliness. Absolute cleanliness of surroundings, equipment and person are necessary to insure success.

2. Sterilization Object: a. To kill germs that were on material to be

canned or in the jars and utensils used in the process.

b. To kill germs in the air that enter the jars during process of filling.

Method. All receptacles and every article used in the canning process must be scalded.

Treatment of Various Makes of Canning Receptacles.

Mason Jars. Place jars and lids after washing in a pan of cool water and allow to come to a boil. Do not remove from water till ready to fill. Dip rubbers in scalding water just before using. Discard lids or rubbers when imperfect. Seal Fast. Boil jars and lids.

Economy Jars. Dip in boiling water just before using.

3. Sealing: Lids of jars must be screwed loosely, with rubbers in place before putting in boiler. When the steaming is finished tighten lids while jars are still hot and Never unscrew again until needed for use. If the process is to be repeated a second day, replace jars in boiler but do not change the lids of any style of jar. One of the main objects in canning is to render air within the jar sterile, and to prevent any non-sterile air from entering and contaminating the air made sterile by steaming.

4. Steaming: Cover boiler with a lid and count the steaming process from the time the water starts to boil. Avoid having to fill up boiler during the process. Remove jars from water while hot and cool as rapidly as possible. For second day, replace jars in cool water and proceed as before.

5. Labeling. In order to have a record for future reference, jars should be labeled with date of canning, time of sterilization and nature of equipment if other than open boiler method. Housewives by this means could experiment in varying time of sterilization.

6. Storage: Jars should be kept in a dry, cool, dark place and should be stored as soon after canning as possible.

Foods in Relation to Canning.

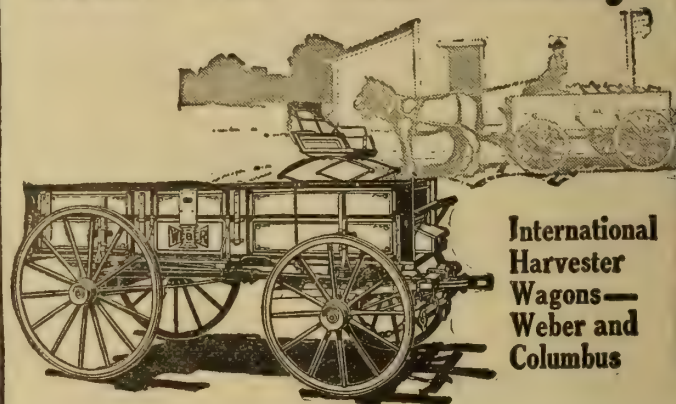
Fruits, when moderately ripe contain considerable acid which aids in keeping the fruit and renders long steaming unnecessary. Fifteen to twenty minutes is sufficient time.

Vegetables. a. Carrots, squash, spinach, asparagus, tomatoes, parsnips, beets, etc., containing varying amounts of sugar and protein, require from half an hour to one hour.

b. Beans, peas and corn, containing starch and protein and being subject to attack by certain germs that resist even high temperatures, require from six to eight hours steaming, to be done on two successive days.

Meats. Chicken and all fresh meats

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Harvester
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YOU can be sure of one thing when you buy a Weber or Columbus wagon—You get more service for your money. The good service they give is one of the strongest features of Weber and Columbus wagons. This service is the result of careful design and construction, such as is shown in the International fifth wheel.

Look between the front axle and bolster, where the king bolt goes through. There you will find the fifth wheel (an exclusive feature). Note the wide circular wearing surface of the two substantial fifth wheel plates. Those plates relieve the owner of a lot of trouble. They prevent breaking or bending of circle irons. They prevent the pitching of the bolster that breaks or bends king bolts. They take strain off the reach and keep the lower part of the front axle from sagging.

This one feature adds years to the life of the wagon, but, better even than that, it indicates the care and thought that have been given to every Columbus and Weber feature, and they are many.

Look over the Weber or Columbus wagon carefully, either at the local dealer's place or in the illustrated wagon folders we will send you on request. Then you will see why, if you want more for your money, your next wagon should be a Weber or Columbus.

International Harvester Company of America

(INCORPORATED)

Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore.
San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah



may be canned under rules for canning—time allowed, three hours.

General Rules for Canning:

(a) **Vegetables.** a. Can as soon after picking as possible.

b. Add a teaspoon of salt to the quart jar.

(b) **Meats.** **Chicken**—Prepare and cut as for frying, pack in jars and fill with cold salted water using a teaspoon to each quart of water.

Beef, Mutton, Pork—Sprinkle meat with salt, pack in jars, add a little water and proceed as usual.

If a large amount of meat is to be put up, the bones may be boiled separately for stock, which may be either steamed plain or to which vegetables may be added and canned as soup.

CANNING DIFFICULTIES

Much Trouble Will Be Avoided by Careful Preparation and Handling of Products.

To enable the home canner to overcome some of the difficulties likely to be met with in canning vegetables, the canning club specialists of the U. S. Department of Agriculture give the following directions:

Sour corn, peas, beans, and asparagus.—Cans of these vegetables may show no sign of spoilage and yet when opened may have a sour taste and disagreeable odor. This trouble can be avoided if the canner will use products which have not been gathered more than five or six hours, and will blanch, cold dip, and pack one jar at a time and place each jar in the canner as it is packed. The first jars will not be affected by the extra cooking. Rapid cooling of these products prevents overcooking, clarifies the liquid, and preserves the shape and texture of the vegetable.

When peas are keeping well, but the liquid shows a cloudy or hazy appearance, it indicates that the product was roughly handled in blanching and cold dipping, or that split or broken peas were not removed before packing. When peas are too old and blanching is not carefully done the skin becomes cracked and the liquid cloudy. Some waters of peculiar mineral content have a tendency to increase cloudiness.

Corn requires care.—Corn seems to give the most trouble, but with a little care and study this product may be canned as easily as any other. Select corn that is just between the milk and the dough stage. Blanch not longer than five minutes. A plunge in cold water is sufficient. Cut the corn from the cob with a sharp knife and pack at once in sterilized jars. Best results can be accomplished when two people cut and one person fills. If working alone, cut of sufficient corn to fill one jar, pour on boiling water, add salt, place rubber and cap in position, and put the jar at once in the canner. A little overcooking does not injure the quality of canned corn. Corn should not be tightly packed in the jar; it expands a little in processing and each jar should be filled scant full. Corn in the dough stage before being packed has a cheesy appearance after canning. Corn should never be allowed to remain in the cold dip and large quantities should not be dipped at one time unless sufficient help is available to handle the product quickly. Water-logged or soaked corn indicates slow and inefficient packing.

Faded beets.—The older the beet the more chance there is for loss of color.

Leave on 1 inch of the stem and all of the tail while blanching. Blanch not more than five minutes and cold dip. To remove the skin the beet should be scraped, not peeled. Beets should be packed whole if possible. Well-canned beets will show a slight loss of color when removed from the canner, but will brighten up in a few days. Small beets that run 40 to the quart are the most suitable size for first-class packs.

Shrinkage of greens.—This is usually due to insufficient blanching during the canning process. The proper way to blanch all greens or pot herbs is in a steamer or in a vessel improvised to do the blanching in live steam above the water line. If this is done, a high percentage of mineral salts and volatile oil is retained by the product.

Too great acidity of tomatoes.—A degree of acidity disagreeable to the taste which is sometimes noted in canned tomatoes may be corrected when cooking by adding one-fourth teaspoonful of baking soda to a quart of canned tomatoes.

Water for home canning.—The hardening of beans, peas, and some other products after cooking or processing, or the turning of green vegetables to a dark olive or russet color, usually indicates that the water contains too high a percentage of mineral matter. Water used for canning purposes should be pure, soft, and as free as possible from objectionable excessive quantities of mineral matter. If a large quantity of food products is to be canned and there is difficulty with the water available, it would be well to have the water analyzed. It would be well also to secure advice from the college of agriculture or from the Office of Home Economics.

CARE OF THE CARPET SWEEPER

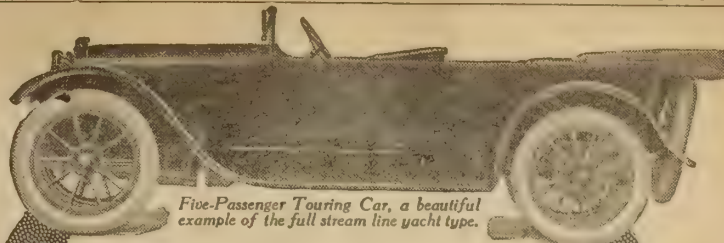
Do not allow the carpet sweeper to become clogged or dirty. Empty after each using. To clean the brush, remove from the sweeper and cut the entangled hair and strings loose with a pair of scissors. Then comb out with a coarse comb.

SOME TIMELY RECIPES

Lemon Syrup—Press the juice from as many lemons as is necessary to make eight ounces; grate the thin yellow rind from four into the juice and set aside for eight hours; strain and add to a gallon of plain syrup made by boiling a pound of sugar and a pint and a half of water; but as some prefer the acid taste of the lemon, the syrup may be served when the acid is used.

Strawberry Jelly—Strawberries alone do not make good jelly, because they do not contain enough pectin. To make strawberry jelly, boil the white part of an orange peel until tender and add the juice to the strawberries. To determine whether or not pectin is present in the juice of any fruit, place two tablespoonfuls of the fruit juice in a clear glass and add an equal quantity of 95 per cent grain alcohol. Carefully turn the glass over on one side. If the pectin is present a large amount of it will be in the form of a clear lump. If this is the case it is safe to add as much sugar as juice. If the pectin is present in small lumps, use less sugar than juice.

Always remember that a good deal may be said on the other side.



Five-Passenger Touring Car, a beautiful example of the full stream line yacht type.

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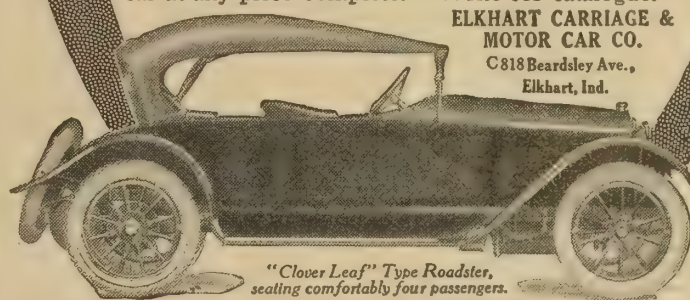
Each ELCAR is built for a long life of satisfactory service—built to outlast other cars in its price class, and by a concern which for 43 years has manufactured only quality products. In beauty of design and finish, in mechanical excellence and proven performance, it rivals cars selling at \$1000 and more. Dollar for dollar we believe it represents the best value on the market today.

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"Clover Leaf" Type Roadster, seating comfortably four passengers.

Parowax

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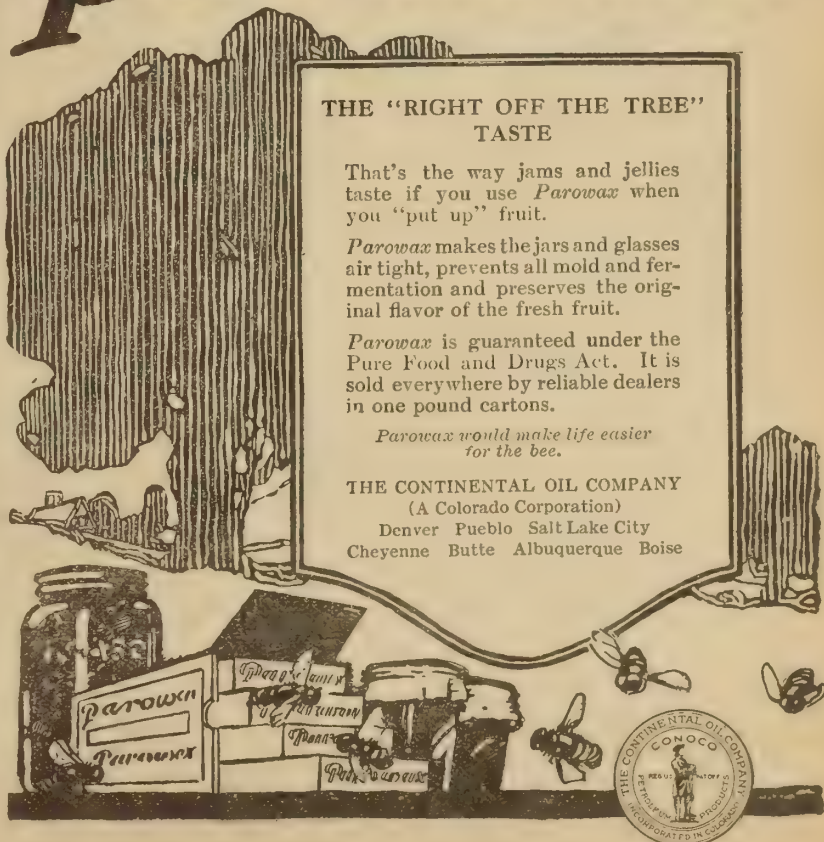
That's the way jams and jellies taste if you use Parowax when you "put up" fruit.

Parowax makes the jars and glasses air tight, prevents all mold and fermentation and preserves the original flavor of the fresh fruit.

Parowax is guaranteed under the Pure Food and Drugs Act. It is sold everywhere by reliable dealers in one pound cartons.

Parowax would make life easier for the bee.

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SAND-CLAY AND GRAVEL ROADS AND THEIR CONSTRUCTION

Manen Allen.

All highway types are in a state of evolution, and it is likely that many years will pass before we shall be able to design, build, and use each so as to secure the best results. The types that are in general use are earth, sand-clay, gravel, macadam, concrete, and block. In my last article I had considerable to say of the earth road, and shall omit further reference to it at this time.

The sand-clay road is made use of where the materials are available for this type. Like the earth road, it will not stand up under heavy traffic through either a prolonged dry spell or a prolonged wet spell. It is a little more durable, however, than the earth road, but not so good as well-built gravel road. The same precautions in the matter of drainage should be taken as in the case of the earth road. All types are alike in this regard, and in order to secure the best results, thorough drainage must first be provided. The sand-clay road is one composed of a combination of sand and clay approximately in the proportions of one part of clay and three parts of sand. The proportions must be varied to fit the character of the materials. Usually the best clay to use is that which is the stickiest, and a graded sand is usually better than sand or uniform sized grains, and sharp sand is better than sand of round grains. The sand and clay are first mixed dry, to secure a uniform mixture. It is then thoroughly wetted either by sprinkling or rain, mixed again, shaped by the road grader, rolled, and put into finished shape by the drag. The mixing is usually done by a harrow and a disk harrow followed by a straight or spike-tooth harrow gives good results. The crown of a completed sand-clay road should be about three-quarters of an inch to the foot. Much better results will be obtained if the subgrade is thoroughly consolidated by rolling before placing the sand-clay mixture. This is true of any type of road, even that of earth. It is not possible by ordinary methods of rolling to consolidate a thickness of more than about five to six inches of material at a time. The maintenance of the sand-clay road is performed in the same manner as for the earth road, except that for some time after construction the surface must be carefully inspected to determine whether the proper proportions of sand and clay were used or the mixing well done. If there appears to be a surplus of sand on the surface, it should receive a thin covering of dry clay, and, if sticky, a little coarse sand should be uniformly applied. The cost of maintaining a sand-clay road should not exceed that of an earth road.

In many localities gravel is abundant and may be used to advantage in road construction. For moderate traffic, the gravel road gives excellent results. The gravel for the purpose should be hard and tough and contain approximately 15 per cent of binding material in the shape of lime, clay, or loam, the preference being in the order given. The gravel should be angular rather than smoothly rounded or spherical and for this reason pit gravel is usually superior to creek or river gravel. Pit gravel will usually contain a larger proportion of binding material than stream gravel.

Satisfactory results are difficult to obtain without screening. The percentage of fine material is quite often excessive in gravel deposits, and unless screened, a road formed of it will be likely to break up in spots. The gravel road should be constructed in two courses. The bottom course should be about six inches in thickness after consolidation, and for it the larger sizes used, from 1½ to 2½ inches. This should be evenly spread, rolled, filled with finer material containing about 15 per cent of binding material, and rolled until solid, after which the top course of about four inches should be put on. The top course should be composed of material from ¾ to 1¼ inches. It should be rolled lightly at first, then filled with fine material containing about 15 per cent of binding material, rolled, sprinkled, and rolled again, until solid and with all voids filled. After the road has been well consolidated, it should be covered with a thin layer of course sand, after which it is ready for traffic. It is fully as important to roll the sub-grade for a gravel road as for an earth or a sand-clay road. The maintenance of a gravel road, if not treated with bituminous material, is about the same as for an earth road. If the gravel road is subjected to a moderate amount of automobile traffic, it should be given a surface application of bituminous material, about ½ gallon to the square yard, applied hot under pressure. Previous to this application, the road should be thoroughly swept to remove all fine material, and immediately after application, a thin coating of fine gravel or coarse sand should be put on.

DOGS, WOLVES AND BUZZARDS INDICTED AS GERM CARRIERS

G. W. Barnes, Arizona U. of U.

The distribution of the diseases and pests of livestock into the home, the watering trough, and throughout the range pastures, is greatly facilitated by dogs, wolves, and buzzards. Dogs have been known to travel for several miles to get meat from dead animals. Unless one happened to know the individual animal he can not say what has caused its death, and this cannot be determined, unless the stockman happens to be familiar with animal diseases. Perhaps it may have had tuberculosis, anthrax or actinomycosis, which one is permitting to be brought into his family by a pet dog and handed out in wholesale quantities to the children. If the cause of death were blackleg, etc., the germs would be scattered over the range. And then after having visited a dead animal, such dogs may stop at some water hole to take a drink, thus leaving millions of the germs to infest the cattle, and if the stream should be a running one, the germs may be drunk by some person.

The coyote and wolf spread stock diseases in the same manner as dogs, except that they do not infect homes.

There is no living species of animal life known to exist which can make a more thorough distribution of disease germs and contaminate more range and water than the buzzard. Anyone who has ever had the pleasure (if there be any) of going from windmill to windmill and cleaning out the troughs so that it may be possible for the cattle to drink the water, is in position to know something about the contamination of range water by buzzards. Everybody has doubtless heard the

Always Fresh, Crisp and Good

Eliminate part of the kitchen drudgery during hot weather by relieving mother of home baking and placing on the grocery list—

**ROYAL
TABLE QUEEN**
"The Perfect Bread"

This bread is always crisp and good. It's the bread that has induced mother to stop baking. Only the highest grade flours are used for this perfect bread, and these are blended together to produce an extremely pleasing flavor.



You'll never tire of this bread. Order from your grocer.

Royal Baking Co., Salt Lake City, Utah



argument that if the buzzard were not in the country to eat up the dead cows, horses, and sheep, it would be impossible for man to exist. If we could in some way prevent the germs upon the grass, in the water, buzzard from distributing the disease and elsewhere, there would not be so many dead animals, because the diseases would be confined to a smaller area, since they would not have such a good medium by which to spread.

The Remedy.

What steps should be taken to control the spread of disease by the dog, wolf, and buzzard, and to keep the screw worm in check?

The dead animals should be systematically burned or buried, and that will be taking one of the best steps toward freeing the ranges of disease. Some say that burning and burying is impracticable, others that it is impossible; but it is the only way to make the ranges the most healthful in the world. Too often are several dead cows found in a water-hole. It is certainly not impossible to remove them so that the water will not become so contaminated that other deaths will be caused from drinking it. Sheep men, as well as cattlemen, would do well to bury or burn dead sheep, and when sheep die in streams their carcasses should be removed.

On the open range, however, something more than the individual efforts of occasional stockmen will be needed. "What is everybody's business is nobody's business," and my suggestion is that the local or county cattle growers' associations take up this matter of keeping the range clean as a serious business proposition on a co-operative basis. A systematic persistent co-operative effort rigidly

carried out by the stockmen will surely result in reducing the enormous financial losses due to disease and pests.

A DRY FARMER'S WOES

The gopher is an awful pest; he eats up all our crops. To kill him we have done our best, but still alive he hops. We have no peace, for night and day, we're ill at ease about our pay. Full well we know that what we gain must come from what we raise, and so it is always with pain, we watch old gopher out to graze. He whacks the grain before our eyes and cares not whose it is. His form swells to a ponderous size, for life to him is bliss. We lay out dope for him to eat, in hopes that he will die, but just the same, he mows the wheat and turns next to the rye. If some wise man could tell us how to kill this awful pest, and do it soon, in fact right now, we'd certainly feel blest!

A Discouraged Dry-Farmer.

(Will some of our readers give us their experience with the gopher. How did you get control of him. —Ed.)

NOT EVEN A POSTAL CARD

The new postmaster was not having a very happy time, besieged as he was by a crowd of burly men all demanding their letters at the same time.

At last one strode in and shouted with a voice of thunder: "Have you got any letters for Mike Howe?"

"For who? snapped the postmaster. "Mike Howe, I said! Don't you know your job or can't you talk English? Have you any letter for Mike Howe?"

The postmaster took his glasses off. "No, I have not," he snorted; "neither for your cow nor anyone else's cow."

MEANS OF CONTROLLING HOUSE AND LAWN ANTS

Destruction of House Colonies.

The distinctively house-inhabiting ants, such as the little red or Pharaoh's ant, and other imported species nesting in the woodwork, masonry, or articles of furniture, etc., are often very difficult to eradicate because of their inaccessibility. If the nest can be located by following the workers back to their point of disappearance, the inmates of the nest, if near by, may sometimes be reached by injecting a little bisulphid of carbon, kerosene, or gasoline into the opening by means of an oil can or small syringe. In the use of these substances, naturally, precautions should be taken to see that no fire is present, as all of them are inflammable. If the nest is under flooring it may sometimes be gotten at by removing a section; but, as a rule, unless the colony can thus be reached and destroyed other measures are of only temporary avail if food or other conditions continue to attract the ants and facilitate their continued breeding in the house.

The removal, therefore, of the attracting substances in houses, wherever practical, should be the first step. Ants are attracted by food material, especially cake, bread, sugar, meat, and like substances in pantries and elsewhere, and the nuisance of their presence can be largely limited by promptly cleaning up all food scattered by children and by keeping in the pantry or store-room all food supplies which may attract ants, in ant-proof metal containers or in ice boxes, and limiting the amount of such articles as far as possible to daily needs.

That it is possible to drive ants away from household supplies by the use of repellents, particularly camphor and naphthalene flakes or powdered moth balls, has been asserted. The use of most of such repellent substances, however, in connection with food supplies, is impracticable, and careful tests have indicated that such substances have only slightly repellent properties and bring comparatively little benefit.

The collection of ants by the use of attractive baits is frequently recommended. Perhaps as convenient a bait as any consists of small sponges moistened with sweetened water and placed in situations where they can be easily reached by the ants. These sponges may be collected several times daily and the ants swarming on them destroyed by immersion in hot water. It is reported also that a sirup made by dissolving borax and sugar in boiling water and distributed on sponges will effect the destruction of the ants in numbers. Remedies of this kind, however, are of doubtful value. They may be useful at the outset when the colonies are few and small and when most of the individuals may, by these means, be secured and destroyed. Very frequently, however, the distribution of such baits will simply result in a more wide exploitation of a good forage ground and an actual increase of the ant nuisance.

A more efficient remedy, where it can be safely used, is a sirup poisoned with arsenate of soda, the idea being that the ants will collect this poison sirup and convey it to their nests, so that not only the ants which collect the sirup are ultimately killed, but the inmates of nests feeding on it also succumb. The formula for the preparation of this sirup is as follows: One pound of sugar dissolved in a quart of water, to which should be added 125 grains of arsenate of soda. The mixture should be boiled and strained, and on cooling is used with sponges, as already described. The addition of a small amount of honey is said to add to the attractiveness to ants of this mixture. Naturally the greatest precautions should be taken in preparing this sirup and in safeguarding it afterwards to prevent its being the cause of poisoning to human beings or domestic animals. This method of control has been tested for three years by an expert of the Bureau of Entomology of this department and has given very satisfactory results. Similar success with it has been reported by others, including persons engaged professionally in insect extermination.

In the case of lawn ants where only a small area with few nests are concerned, drenching the nests with boiling water or injecting a small quantity of kerosene or coal oil will be effective, and similar treatment will

apply to nests between or beneath paving stones.

Another simple means of destroying ants in lawns of small extent is to spray the lawns with kerosene emulsion or with a very strong soap wash, prepared by dissolving any common laundry soap in water at the rate of from half a pound to a pound of soap to the gallon of water.

An effective control method for larger and colonies is to inject into the nest a quantity of bisulphide of carbon, a chemical which can be placed in the nest with an oil can or small syringe, the quantity varying from half an ounce for a very tiny nest to 2 to 3 ounces or more, depending on the size of the nest. An oil can or syringe with a long spout is convenient for this purpose, as this can be inserted into the nests and the liquid injected without its being too near the operator's nose. To facilitate entrance of the chemical, the ant hole can be enlarged with a sharp stick or iron rod. The depth of the injection will depend on the size of the nest—from an inch or two to greater depths. After injection of the bisulphide of carbon the entrance opening should be closed by pressure of the foot to retain the bisulphide, which will then penetrate slowly throughout the underground channels of the nest and kill the inmates. The efficiency of this remedy is increased by covering the nest immediately after the injection with a wet blanket or other heavy cloth, to better retain the fumes of the chemical. Bisulphide of carbon has a very disagreeable odor, but its fumes are not poisonous to higher animals. As already noted, it should be kept away from fire, as its fumes are inflammable and may explode if ignited, much like gasoline vapor.

Protection from the Carpenter Ant.

The method of protection from damage by the carpenter ant is practically the same as that employed to protect from termites, namely, preventing the ants from gaining access to foundation timbers by using in the foundations only timbers which have been previously impregnated with creosote. Ants infesting house timbers which have not been so protected may sometimes be reached and killed by the abundant use of kerosene injected by means of a syringe or, where the timbers are accessible, by spraying or soaking them with kerosene. All timbers which have been mined and weakened should, however, be placed with timbers protected with creosote.

CONE FLY TRAPS

Fly traps are recommended as far more effective than fly paper, poison or fly killers for reducing the annual crop of house flies. Tests have been made by the government officials and show that the cylindrical cone type are the best.

Here is the way to make a trap of the cone type with only four second hand barrel hoops, a barrel head, a few strips of lumber, and 45 cents worth of screening and tacks:

The two barrel hoops are bent into a circle and nailed together, the ends being trimmed to give a close fit. These form the bottom of the frame and the other two hoops, nailed together in a similar way, the top. The top of the trap is fitted with an ordinary barrel head with the beveled edge sawed off, causing the head to fit closely in the hoops to which it is securely nailed. A square is cut out of

No Wonder It Is So Good

—That's what you would say if you saw the care exercised in the making. If you could trace Utah-Idaho Sugar from the beets in the field through the process of manufacture to your home, you would know why it is so good. You would probably think we were too particular; that we pay too much attention to details. But each step adds to its high quality and makes the finished product one of merit.

UTAH-IDAHO SUGAR

ABSOLUTELY PURE

the center of the top to form a door, and the portions of the top are held together by inch strips. The door consists of a narrow frame covered with screening well fitted into the trap and held in place by buttons. When nailed together the trap is cylindrical in shape and the frame is covered with closely tacked screen wire on the outside of the hoops. Four laths (or light strips) or nailed to the hoops on the outside of the trap to act as supports between the hoops, and the ends are allowed to project one inch at the bottom to form legs. A cone is cut from the screen and sewed with fine wire or soldered where the edges meet. The top of the cone is then cut off to give an opening an inch in diameter. This is then inserted in the bottom of the trap and closely tacked to the hoop around the base.

Care is necessary in choosing a location for the trap if it is to attract the greatest number of flies. Traps may be baited with milk or molasses and water contained in a shallow bucket cover placed beneath the trap. The trap should be located where flies naturally congregate. Fresh bait should be put in frequently and the caught flies killed and emptied out. The destruction of the flies is best accomplished by immersing the trap in hot water, or still better by placing a few live coals in a pan on the ground and scattering sulphur over them. The trap should be placed over the coals and a barrel turned over to confine the sulphur fumes. The flies will be rendered motionless in about five minutes and may then be killed with hot water or thrown into the fire.

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THE USE OF



Grease and Motor Oils

Cuts down the cost of lubrication and by detracting from the deterioration of the machinery, cuts down the cost of the machinery itself. An ideal lubricant for farm machinery.

Endorsed by leading miners, manufacturers and agriculturists—it is the best.

Ask any engineer—anywhere.

Write for liberal free sample—Postpaid.

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GREEN CONCRETE MIXERS

No matter how small the job all concrete should be thoroughly mixed. The old method of shoveling is tiresome from a physical standpoint and is very unsatisfactory for consistent mixing.

Our foot, steam or gasoline power mixers will solve the problem for you. Made in several sizes and endorsed by all who have used them. Made in Utah.

Write for information and bulletins. GREEN MACHINERY AND MFG. CO. American Building 338 So., Main St. First Building north of Post-Office Salt Lake City, Utah.



POULTRY

DO NOT NEGLECT POULTRY IN SUMMER

Careful attention should be given to poultry details at all times of the year. Hot weather requires fresh water, shade and roomy quarters.

The farms that are producing eggs and poultry for the city dweller do not make the money they should, owing to the lack of care in handling the flocks.

To make money out of your chickens you must cater to the best trade, and handle the birds in the best possible manner, for a good egg yield at a time of the year when eggs command the best prices. Care of the poultry is given the flocks during the winter, when egg prices are the most alluring, but also during the summer months, when the flocks get little attention from the average beginner. And yet this summer care is just as important as the care in winter, and in some cases more so. In the case of a young chicks that are to be producers of hen fruit during the winter, any neglect will cause them to slow up in maturing, and instead of being at the proper weight and size at five and six months they are below weight, and maturity is a month, and sometimes more, behind. And this means a loss which cannot be recovered with the old fowls, because of the fact that the eggs are no longer desired for the hatching of chicks. The output from the old fowls is not so great, they are given but indifferent care, often penned in yards without a spear of grass or green food, on some farms; many times with no protection from the rays of the summer sun, except a retire in the poultry quarters, which are often so constructed as to be unbearable. Many of the hens so treated are to be the 1917 breeders, yet with this kind of treatment they cannot be in condition to produce eggs, strong in fertility, or hatching qualities.

The summer care of the 1917 breeders will have much to do with the fertility and hatching of the 1917 crop of chicks. This is so often overlooked by not only the beginner, but many times by the more experienced poultry keeper. The growing chicks must have roomy quarters, which should never be allowed to become overcrowded, an evil many poultry keepers indulge in to the detriment of their flocks.

Quality, and not quantity, is what will put the balance on the right side of the ledger. Quantity has put many out of the poultry business when not coupled with quality. If more poultry keepers realized this important fact there would be far better returns from their work, with much less labor.

Many beginners in poultry are like some farmers at planting time—its so easy to plant a larger acreage in the spring, but very hard to give it proper cultivation during the summer months. So with poultry, many chicks

are hatched, but too often poultry quarters are not large enough, poultry runs not in good condition or roomy enough to accommodate the chicks. This can only mean a slow growth of chicks, and in some cases a death rate larger than it should be. Many of the chicks will never develop into good producers, and in these cases the breeder who sold the hatching eggs or day-old chicks will receive the blame for the poor quality of the growing stock, when the fault lies with the poultry keeper who fails to comply with the essentials that must be followed if the best results are to be obtained. It cannot be said that with so much free advice, given in the poultry press, in many cases by those who are making good on their own plants or farms, that the poultry keepers do not get a chance to learn. Rather they do not follow the instructions. For young chicks the essentials are not so many, but must be faithfully carried out to secure the best results.

First, roomy, well-ventilated poultry buildings.

Second, keeping birds of the same age together and not overcrowding.

Third, poultry yards or runs seeded to grass, clover or alfalfa when they cannot have the advantage of free range. Shade in some form should be provided. Natural shade is best, but artificial shade can be secured by erecting board or muslin shelters. This keeps the growing stock from seeking protection from the hot sun in the poultry buildings, which, no matter how well constructed, will be hot during the day.

Fourth—Fresh water, in clean vessels. This in the heated spells of July and August is more important than feed.

For the older fowls, those to be retained for layers and breeders, less corn should be fed, and they should be made as comfortable as possible, that they may go into winter quarters in good condition. There is nothing hard about the handling of the flock during the summer months. Rather is it a matter of seeing that the small details are complied with. This may appear to the young poultry keeper of small importance, but they are the mainsprings to success in poultry. Neglect any one of the so-called minor essentials and a loss is bound to follow. The most successful poultry keepers will always be found among those who are looking forward to giving their flocks every reasonable comfort, both in winter and summer.

SWAT THE ROOSTER

Swat the Rooster and sell infertile eggs during the summer. It insures greater profits to the producer, the dealer can handle them on a smaller margin, and the consumer gets better eggs to use which increases the demand.

The presence of male birds in the flock does not increase egg production but from two to three per cent of the females are injured by the males which lowers the egg yield from the entire flock.

Feeding the male birds after the breeding season is a useless expense. Many produce dealers pay more for roosters on Swat the Rooster Day in order to encourage their sale.

If an egg contains the fertilizing germ proper heat is the principal factor which will cause the germ to grow. The summer temperature will

cause the germ to develop and if it is chilled or killed in any way, it is the point where decomposition begins. If there is no germ in the egg there is no point for decomposition to set in except from an outside source. Therefore, infertile eggs are more satisfactory for all concerned.

It should not be understood that infertile eggs should be kept longer or cared for improperly for that would mean no improvement over old methods. Infertile eggs should be marketed just as often and cared for just as carefully as fertile eggs which will insure an improved product going on to the market.

All eggs should be sold on the loss-off basis; i. e., all eggs should be candled and only the good eggs paid for. It will be seen that ten dozen infertile eggs, all good, will bring more money than twelve dozen fertile eggs if three dozen are candled out, being bad.

If you have a valuable male bird which has proven to be a good breeder don't sell him, but place him in a pen with half a dozen of the best hens and late hatching may be done from this pen.

Don't keep any males in the flock during the summer.

A good, steady man can starve a "good mixer" to death in two or three years.

There are always people to say that the best singer in the world can't sing.

Successful Farming

The size of business often has much to do toward making the farm profitable.

Here is a small farm of 50 acres, JUST WHAT YOU WANT, with a rich, black loamy soil. Well adapted to the raising of beets, alfalfa, fruit, garden truck, etc. Good market for the garden truck near by. A good permanent investment for a man that wants an ordinary sized place that he can make a good profit out of.

Prior water rights at \$1.00 per acre if used.

See or write—today

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Travel More
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Half Fare
Sundays—
Slightly More
Saturdays to
Mondays.

EACH WEEK

BETWEEN LOCAL POINTS.

This innovation has been established for the purpose of permitting residents in local O. S. L. territory to visit back and forth Sundays and during week ends.

Saturdays to Mondays—

—To encourage baseball games and other sports between different towns.

—To make possible inexpensive outing and fishing trips, and generally to make it possible for our patrons to "get about."

Ask any Oregon Short Line agent for further details, or write,

D. S. Spencer, General Passenger Agent,
Salt Lake City, Utah.



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THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

Gem Herd of Improved Chester White Swine

This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions of the World's Fair held at Frisco this last year. Both Sire and Dam, is still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale at all times.

Address

GEO. H. LAWSHE

Falls City

Idaho

HOLSTEIN BULLS FOR SALE

Sons of Wachussetts Creamelle George the 2nd whos daughters have made from 350 to 500 pounds of butter fat a year just with ordinary care. Wachussetts was 2nd prize aged bull at the State Fair last fall and all of his get were first in their class but one. His dam gave 105 pounds of milk in a day that tested better than 4 per cent. No. 1 Iowana George 3rd a fine 18 months old son of Iowana Colanthe Alberkerk. A high testing heifer from Iowana Farms, Iowa, her dam has a 19 pound record. This young bull was Junior Champion at the State Fair. The first check for \$200 takes him. No. 2 Wachussetts Beauty a 12 month old son of Maudeline Of Beechwood Beauty with a 23 pound butter fat record, milk test 4.6. She is a full cousin to Colanthe 4ths Johana, \$150 buys this one. Take no chances, get a bull from a proven sire and one that has produced the goods. Offer several others from 6 months to 1 year old from \$75 to \$125 each.

J. W. STUBBS

Charleston

Utah

BATES AND SONS

Provo, R. F. D. No. 1.

Breeders of S. C. White Leghorns and R. I. Red fowls and Airedale Dogs.

UTAH HATCHED WHITE LEGHORN BABY CHICKS \$11.00 PER 100

Circulars, order-blanks, etc., upon request. Candee Colony Brooders carried in stock.

GLENWOOD EGG FARM

R. D. 3

Murray, Utah

REGISTERED JERSEY BULLS

We have several excellent bulls from high producing dams of breeding that will appeal to you they are bred for business, from cows that show that they can do business, for the business farmer at prices you can well afford to pay considering the individual.

The home of

Tormentors Dairy King

Breed for production.

One of the richest breed Tormentor bulls in the West average Register of Merit test of dam and G. dam, 828 lbs. of butter in one year, photo's, price and description gladly furnished if you are seriously interested.

A. C. ANDERSON AND SONS

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WANTED AT ONCE

Six expert irrigators, levelers and fresno men. Address

A. G. MACALLAN

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Money to Loan

On improved farms with primary water rights, at reasonable rates.

Quick Service.

We lend our own funds.

INTER-MOUNTAIN LIFE

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FOR SALE

Three pure bred registered Percheron mares. Must sell at once. One now in foal. Price for the three \$1,000.00. Write or call on

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Wanted to hear from owner of good ranch for sale. State cash price and description. D. F. Bush Minneapolis, Minn.

WE MAKE

Farm and Ranch Loans in Utah, Idaho, Wyoming, Oregon and Colorado.

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We carry a large stock of the Best Vegetable Parchment Butter Wrappers and Especially Prepared Ink for Printing the same. We furnish them Postage Prepaid at the following Prices, money to accompany order.

100	\$.90
200	\$1.25
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1000	\$3.00

Send all orders to

THE UTAH FARMER

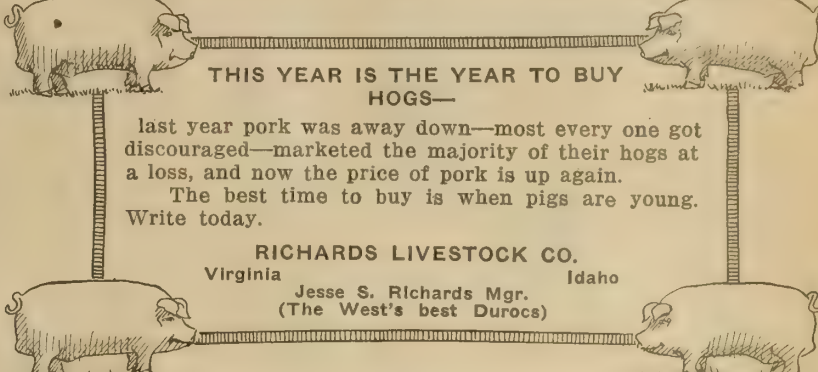
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A LITTLE EXPERIMENTING

GOOD FOR A FARMER

New Crops and Methods Should Always be Given a Thorough Trial.

Why not try a new variety of your main crop? Do not wait for some one to do your experimenting for you. The successful business man is the one who is first in the field. He tries out carefully, new methods or new



THIS YEAR IS THE YEAR TO BUY HOGS—

last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again. The best time to buy is when pigs are young. Write today.

RICHARDS LIVESTOCK CO.
Virginia Idaho
Jesse S. Richards Mgr.
(The West's best Durocs)

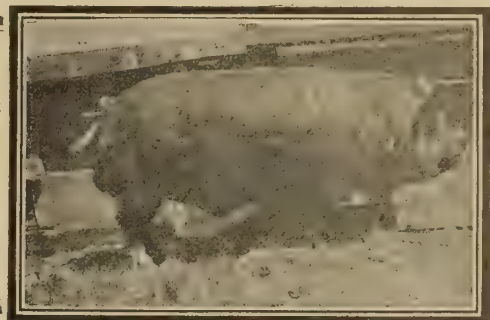
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Grand Champion boar at two Utah State Fairs. Sire of a dozen champions. The greatest breeding boar and most valuable pig ever owned in Utah. Young stock carrying the blood of this boar for sale at reasonable prices.

CAINE LIVE STOCK CO.

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WHEN IN LOS ANGELES
STOP at the NEW
FIRE PROOF
HOTEL NORTHERN
EUROPEAN
200 OUTSIDE ROOMS
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NORTHERN HOTEL CO., PROP.
FRANK L. CRAMPTON, MGR.
CAFE
IN CONNECTION
RATES \$1.00 PER DAY AND UP

products. The successful farmer is first in his field.

If you have never raised a forage crop, try one. If you are growing defiance spring wheat why not try a macaroni wheat? Perhaps another common variety such as Marquis or Red Fife would do well.

Of course, if your community has settled upon a variety as a community enterprise, as is done with peas, potatoes, apples, alfalfa, etc., it is not wise to depart from it.

Always try just a little of anything new—a quarter acre, a half acre, or even an acre. Give it just average ground—it is better right alongside the standard crop. Don't baby it. Make it prove its worth, if it has any.

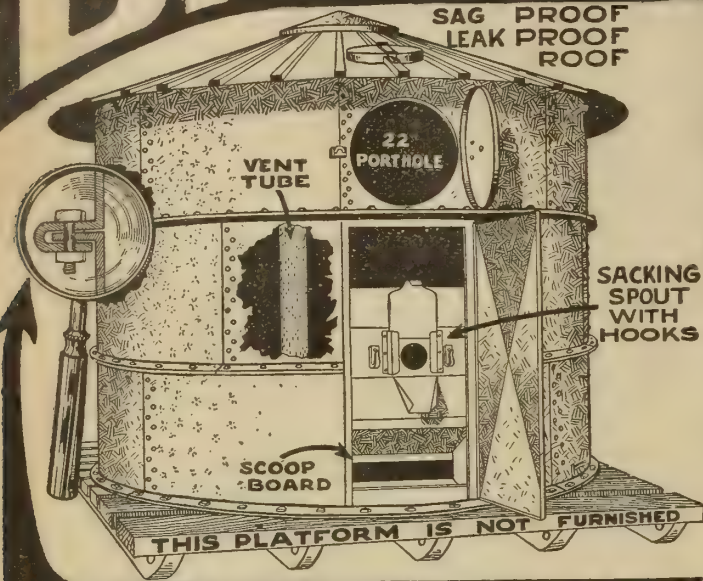
The pleasure of trying out for one's self the value of a crop is the best return. Do not make your whole farm an experiment farm or you will surely fail. But a little experiment now and then is relished by successful men.—Breeze Boyack, Colorado A. C.

Mention Utah Farmer when you write.

BIG PROFITS FOR COLUMBIAN BIN OWNERS

\$200 To \$800 CLEAR PROFIT FROM EACH 1000 BU. BIN

SAG PROOF
LEAK PROOF
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That's just what we mean, \$200 to \$800 clear profit on every 1000 bushels of grain stored in Columbian Metal Granaries. Thousands of farmers did this last year and you can do as well with one of these Wonderful Grain Bins. There's no chance to lose. Prices always advance and many predict \$2.00 wheat before the year ends.

COLUMBIAN METAL GRAIN BINS built to last a lifetime. They will pay for themselves the first year and show a big profit besides. After that every cent they make you is clear gain as there is no extra expense for up-keep. They are made of the best grade of galvanized metal and black steel enameled. They cannot collapse, blow down or burn up.

DESCRIPTION Both roof and walls are made in sections. Our patent reinforced joint prevents bursting when full and makes erection so simple that you can do it yourself in a few hours time. All bolts, tools and instructions are shipped with the bin.

The roof is sag-proof, leak-proof and self-supporting. The sections are joined by means of our special box joint which makes assembly easy and adds much to the appearance of the finished bin. Every bin is equipped with a large 6-ft. by 2-ft. entry door, also removable door board, sacking spout, collapsible scoop board, one ventilating tube.

You can mount these bins on platforms and haul them out to the threshing to be filled direct. This saves all the expense of extra teams, sacks and labor at threshing time. This saving alone will pay the cost of the bin.

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SEE The Reinforced Joint

SEND NO MONEY Just fill in the coupon, get our low freight prepaid prices and Free Grain Bin Folder. It has full details as to how you can make the big extra profits by storing your grain, beating the speculator at his own game.

Our manufacturing capacity is a grain bin every four minutes. This insures shipment of your order the same day it is received.

Decide now to own a Columbian Metal Grain Bin. You can then laugh at threshing time prices. If your dealer doesn't sell them we'll ship you direct on our Special Send No Money proposition. If you want to get the full value for your wheat crop, then—

SEND THIS QUICK
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.....Distributor
of Columbian Metal Grain Bins.

Send me your Grain Bin Folder and low delivered prices.

I will have about.....Bu. of Grain.

Name

P. O.

Shipping Point

The Farmer Seeking Contentment

A man who had a large and flourishing agricultural estate grew discontented and resolved to exchange his prosperous but laborious existence for the ease and comfort of the city, says R. C. Reade in Canadian Countryman.

He saw tens of thousands of people raising at daybreak in distant suburbs and rushing into factories in furious haste lest they should be too late for the seven o'clock whistle.

He entered and saw them driven like pieces of machinery in an inexorable industrial system, working perilously near the limit of mental and physical strength.

"I can go to work when I wish," he reflected, "and take a breathing spell when I need it. I would sacrifice both strength and freedom to enter this treadmill. Agriculture is not so great a tyrant as industrialism."

At eight in the morning he beheld a panic stricken army of clerks scurrying pell mell into warehouses and offices.

"Do you do this summer and winter?" he asked them.

"Yes," they replied.

"I am pretty much a slave in times of ploughing and harvesting," he mused, "but I am not a slave to the clock the whole year round. Office routine is merely a mild form of servitude."

At noon he saw thousands jammed elbow to elbow at crowded lunch counters.

"I don't mind a church social at times," he laughed to himself, "but I should soon crack my ribs if I had always to do with so little elbow room as that."

He tried to walk along the narrow and congested pavements and found that he needed the sinuosity of a snake to glide in and out of the jostling crowds with anything like swiftness of motion. Women's hat-pins

endangered his eyes, men's heavy boots imperilled his toes.

"This is like walking to a funeral," was his mental comment. "It must be pretty hard to feel friendly to your neighbors when you have to push your way about in a perpetual football scrimmage."

In the evening he saw the same scrimmage repeated on street cars. There passed by him car after car of wriggling, squirming human beings massed together like a ball of worms.

"I wouldn't drive a crate of chickens to market packed like that," he muttered indignantly to himself. "All those cars need is a few bright labels and they'd pass for exhibits from some canning factory."

He traveled into the suburbs and saw men with little watering pots in their hands, bending over diminutive shrubs in tiny plots of lands behind their houses.

"What are you doing there?" he asked.

"We are cultivating our gardens," they replied. "You can't believe what a pleasure it is to have a little bit of Nature at your porch, after a long day in a city office."

"If that's Nature," said the farmer, "I guess my hundred acres must be Eternity. They'd make ten thousand doll's gardens like yours."

In the evening everything was brightly illuminated in the heart of the city. Theatres and picture palaces were open and thousands of people flocked together for enjoyment.

"There seems to be a good deal to be said for the evenings," he reflected, "even if the city days are wearisome."

"I suppose you never get tired of all these amusements?" he inquired by a bystander.

"I don't go to the theatre very often," was the answer. "I can't always afford it. In fact, like the majority of people, I spend most of my evenings at home. There is no pleasure like a few friends and a chat at your own fireside; though sometimes we can't hear one another talk for the street noises."

He went into a bank the next morning and noticed a number of persons paying sums into the savings department. They seemed of average prosperity, but the amounts they deposited were very small—not at all as substantial as the sums he had himself banked after even a middling harvest.

He concluded that the average lot in the city was certainly neither more pleasant nor more profitable than his own, and that if Nature was needed to ameliorate the discomforts in such a life, six hundred acres was certainly a better comforter than a small back garden.

THE AUTOMOBILE TRAILER FOR THE FARMER

C. H. Gregg.

Now that the farmer has found that his automobile is more than a pleasure vehicle for himself and family, and can be used for so many duties connected with operating his farm, he is looking into the question of a trailer to increase its efficiency for his commercial purposes.

The average automobile has sufficient power in reserve to pull a well designed trailer loaded to a least a thousand pound capacity. This in addition to the passenger capacity of the automobile and when it is understood that each automobile is so constructed that it will do its rated work under the most severe conditions, it can be seen why there is such a reserve power available when the machine is operated on fairly good roads and light grades.

There are a good many trailers on the market which are built specially for the farmers needs, and the variety of designs is startling. Probably the least successful of any type is the two wheeled trailer. Regardless of how well built or designed it may be, the two-wheeled principle precludes the possibility of it tracking with the automobile around turns and consequently it develops a side pull to the auto that take power far in excess of the reserve and strains the automobile frame. In going through depressions on the road or over bumps

the load on the two wheeled trailer is subject to a severe jolting which makes it almost impossible to keep in on.

There are a great number of four wheeled trailers on the market that fill the farmers requirements and the small addition in price over the two wheeled type is hardly noticeable. As to the solid or pneumatic tires for the trailer, there does not seem to be any special reason why either is superior to the other. Each serves the purpose well, and the pneumatic costs a little more when new, and there is another set of tires to puncture and blow out. On the other hand the solid tire does not take up the road shock as well as the pneumatic.

Any well designed four wheeled trailer will prove to be a good investment for the average farmer who has any amount of light hauling to do with his machine.

By their use the automobile is not subjected to the heavy loads that are usually put in the tonneau and consequently the auto springs are not strained and broken under the unusual load neither is the body of the machine scratched or the upholstery torn as is usually the case when it is used for a truck.

Leaders are nearly all greedy, and a selfish man is better than selfish men are said to be. A really selfish man will not tell a falsehood, or do a dishonest act, for the reason that dishonest and untruthful men are always punished. And a selfish man desires to avoid punishment. A selfish man, because of industry and care, will do something for the community in which he lives; it is the selfish men who affords employment for others. The selfish man may not wish to pay very liberal wages, but the labor unions will attend to that. I am tired of the liberal, great-hearted, unselfish men who do not accomplish anything. The world's weakness is not that we have so many selfish, successful men; the real menace is that so many are poor and so many institutions weak and unprofitable.

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AUG 14 1916

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 2

LEHI AND SALT LAKE CITY, UTAH

AUGUST 12, 1916

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GOOD FARMING

The intense cultivation of our farms means more work and better returns.
It is not so much a question of how much did it cost you to produce this or that crop
—but how much have you left after paying all expenses.
Good farming pays and good farming is the only kind of farming any one should do.

Irrigation Laterals

I. D. O'Donnell.

We often hear the statement that irrigation farming would be more attractive if it were not for the excessive amount of work necessary to irrigate crops. It is admitted, of course, that there is work connected with irrigation. The choice between ordinary farming methods and irrigation farming must be made on the basis of whether it is better to worry about the crops getting the necessary moisture or to work a little in putting the water on the crops.

Much of the talk about the excessive work necessary to irrigate land would be dispelled, however, if the irrigators would irrigate to the best advantage. The first essential is plenty of farm laterals, properly located and substantially built. You can no more reasonably expect to easily and successfully irrigate land through a faulty irrigation system than you may expect to travel speedily and comfortably over poorly constructed highways. Water is inclined to travel in the line of least resistance and is controlled entirely by gravity. If the main lateral brings to your farm a good and sufficient supply of water you can make your work of irrigation easy or difficult according to the manner in which you undertake to handle the water on the farm. Lay out your farm system so that you can irrigate the crops with the least possible work and with economical use of water. Do not wait until it is time to irrigate before you arrange your farm ditches. The farm laterals or ditches must be constructed on accurate grades and subject to a plan which takes into con-

sideration the contour of the land, the nature of the soil, the amount or head of irrigation water to be used, and the kinds of crops to be irrigated. All ditches, irrespective of size, must follow the ridges on the land. Water can not be carried uphill and down in open ditches. Don't expect to coax the water uphill. Build the ditches in size according to the amount of water they will be required to carry. In computing the sizes of the ditches do not lose sight of the fact that the slope or grade of the ditches is as much a factor in determining the capacity as is the size or section of a ditch, i. e., a small ditch with considerable fall will carry as much water as a much larger ditch with less fall.

Another important factor in determining the sizes of ditches is the nature of the soil. Soil that washes easily requires ditches built with but slight fall, while clayey soils and others that do not wash easily may be constructed with greater fall. If the soil is light and sandy and the land is rolling, it will be necessary to construct checks and drops in the canals to prevent erosion in the bottoms of the ditches.

Have plenty of laterals and cross laterals constructed. As a rule short runs of water are most economical both in water and time, and the water is more easily controlled. You create but small waste in taking up considerable land by small ditches. As a rule you will find that the crops bordering on the ditches are enough better than the average for the field to pay for the ground taken up by the ditches. By spending one hour in laying out your farm ditches you may save two hours' time in irrigating.

The saving in labor in irrigation is not, however, the only reason for a proper layout of farm ditches. The irrigation of a crop is usually done at a critical period in the crop's growth—when the crop needs water. It is important, therefore, that the water be delivered quickly and efficiently. It is poor policy to put dependence in a system of poorly located and faultily constructed farm ditches. When you build your laterals, build well.

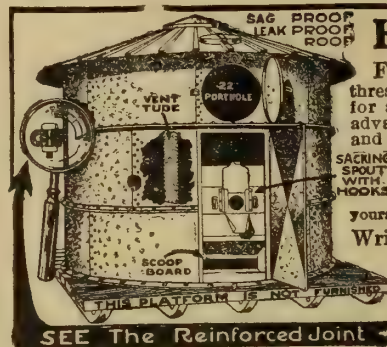
SAVING WASTE PRODUCTS

To save waste products is to increase profits. In agriculture as in manufacturing there are many waste products. Accordingly the farmer or manufacturer that finds the best way to use the waste products and thus prevent loss is the money maker.

The packing houses allow nothing to go to waste. In a large packing plant, much that formerly went to

waste—such as hoofs, bones, hair, horns, bristles, fat, intestines, and blood is now converted into glue, soap, oil, glycerine, knife handles, combs, buttons, and a multitude of other articles. Not only in the packing industry, but in almost every other line of manufacturing, every possible waste product is utilized.

On the farm there are, as a matter of fact, many wastes. Grain is wasted in the fields. Many farmers fail to use the straw or stover. These can all be utilized. Cattle, sheep, and hogs will eat much of this material. It alone is not sufficient to feed the stock, but it can be used advantageously to supplement other feeds. Products are lost through poor storage facilities. There are numerous other wastes that can be eliminated. To save money but judicious management is the surest way to make money.



HOLD YOUR GRAIN

For the higher prices that always come after threshing time. An advance of only 12¢ per bushel will pay for a COLUMBIAN METAL GRAIN BIN. Any further advance is clear profit. Your bin is paid for the first year and grain storage costs you nothing afterwards.

These bins afford perfect storage for your grain. They are rain, rat, fire and lightning proof. We furnish everything; you can easily set them up yourself. Can be mounted on skids and filled direct from thresher.

Write for our Grain Bin folder and low freight prepaid prices. You can't afford to sell your grain now. Get posted at once—write.

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HARRINGTON PLUMER MERC. CO., Denver, Colo.

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The happiness that they will bring into the home will more than repay you. The pleasure you will get out of the playing and singing and the good times will banish the cares and worries of every day life.

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The Utah Conservatory of Music is putting out a course of Piano Studies by Prof. J. J. McClellan that is a masterpiece. It carries in it the result of all his experience as a performer and instructor. A wonderful set of lessons from the pen of this stellar performer. Something that can be understood by everybody. Just the thing for you, who are far away from the musical centers, and would like the instruction of a Master.

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VOLUME XIII.

LEHI, UTAH, SATURDAY, AUGUST 12, 1916

No. 2

The Field Selection of Small Grains For Seed

By George Stewart, Instructor in Agronomy, Utah Agricultural College.

Much is being accomplished on experimental farms by testing in rows or in plats the yielding power of the numerous varieties of crops in order to find out the one best adapted to climate, soil, and cultural methods of the district. Since out of twenty or more varieties some must be best, variety tests promise much.

The United States Department of Agriculture has broadened this work by keeping in the field a number of men to look for new crops or new varieties of common crops that promise to do well in some section of the United States with similar soil and climate. Turkey red and durum wheats exemplify such introductions. At experiment stations, new varieties are tested for a number of years before they are recommended to farmers. Many crop plants are found unsuited and are rejected; but a few have been found valuable. It is of first importance to use one of these tested varieties that has been found adapted to the locality and to the purpose in mind. Many farmers yet plant simply "wheat" or "corn" when they should be growing a variety that has been tested. The State Experiment Station at Logan can give helpful recommendations if the field and soil conditions are described to them.

But the variety test is not the end; it is only the beginning. Rapid multiplication of plants and natural selection are constantly at work. Since each seed is capable of becoming a plant, the number of descendants a parent plant may have depends on the number of seeds it can produce. This varies from a few hundred in the case of some crops to a quarter of a million or more in the case of large Russian thistles or tumbling mustard.

Variation.

Mere chance would cause some of the many descendants to differ from others, but the law of variation causes each individual to differ from every other. Just as no two people are alike, no two plants are alike. They differ in color, size, shape, rooting, flowering and in numerous other ways. Oats always bring forth oats, but there are no two oats plants that do not differ. One among several thousand will do best in particular surroundings. It is upon this principle that both natural and artificial selection depend.

Principles of Selection.

Because some one plant out of thousands is more fitted to survive in its particular surroundings, that one plant will grow most vigorously. Now,

if all the seeds from any one kind of plant grew, this plant would soon fill the whole earth. Therefore, in the end, not many more individuals can live next year than do this year without crowding out others. Since only a few of all the descendants of a plant can possibly survive, those that are most fit live and the remaining ones die. Thus nature constantly improves the wild plants by unending, relentless selection. For countless ages, only the most fit of whole races have endured to rear descendants, which in turn are culled out by ever increasingly rigorous selection. The longer this weeding out of the weakest continues, the better adapted the survivors are to cope with their enemies. All our bad weeds originated in the Old World where, for thousands of years, they have been struggling for existence in cultivated fields. This long, incessant struggle to retain foothold has developed their means of survival.

Because man has put his crop-plants in unnatural surroundings, they have lost the fitness acquired before they were domesticated. The new struggle thus set up causes many variations which afford opportunities for selection. With an ideal in mind, man can improve these plants if he continues to select rigorously and unerringly from many generations of plants grown in the same environment. This is one

(Continued on page 7)

How to Build The "Pit Silo"

F. W. Merrill.

The more one travels through the arid sections of the West and Middle-West the more he is impressed with the seriousness of the problem confronting the man who is trying to establish himself under those arid conditions.

It isn't a question of land, for there are thousands and thousands of acres that have never been touched by the plow. Not a question of soil fertility, for the soil is as fertile as can be found anywhere. Not so much a question of rainfall; but it is a question of growing the crop that is suitable to the dry atmosphere and limited soil moisture. It is also a question of adopting some system that will furnish an income so that he can remain on the land, build a home and establish himself with some degree of security.

So far, no better suggestion has been offered than that the man keep some dairy cows, feed the skim-milk to the hogs, calves and chickens, and market the butterfat in the best market obtainable.

It is a safe proposition, because there is always a market for dairy products, poultry products and pork. This system insures an income every day in the year.

The most difficult feature of this plan is procuring the feeds with which to feed the dairy cow and preserve

them in such form that she can use them profitably.

There is not the slightest doubt but what the silo will do more to solve this question than anything else, because corn can be grown in almost every quarter of the arid region and because the silo will preserve the corn in a succulent, palatable form throughout the year.

We have a type of silo that is especially adapted to dry climate and is within the financial reach of every farmer; this type is the "Pit Silo." It is made by digging a circular hole in the ground and this can be done at any time of the year by anyone who is willing and able to work.

Location

The silo should be located close to the place where the silage is to be fed, preferably at the end of the barn or feeding-alley. The ground should be well drained and surface water should not be nearer the surface than 25 to 30 feet.

Size

The pit should be 10 or 12 feet in diameter and 20 to 30 feet deep; the depth should be determined, however, by the size of the owner's herd. A silo 12 feet in diameter and 25 feet deep will hold 52 tons of silage; 14 feet in diameter and 25 feet deep, 68 tons of silage. Fifty tons of silage will feed a herd of ten cows for a period of seven months, allowing each animal 25 to 30 pounds per day. This simply means a green feed equal to pasture from October 1st to May 1st, or from green grass to green grass again.

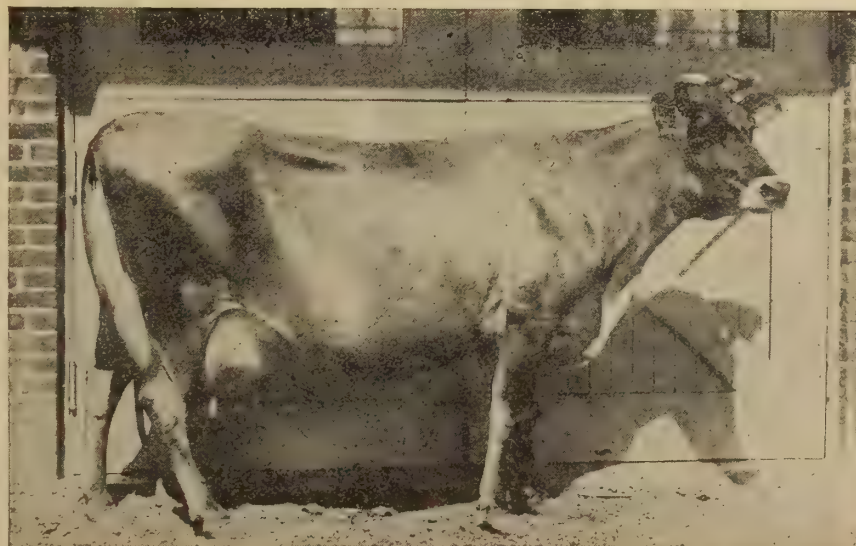
There is little danger of having too much silage space, for silage can be fed every day in the year and in the arid section there is hardly a day when it should not be fed to the dairy cows.

First Step

A pit silo must have a foundation, but in this case the foundation is on top and serves as a rim to protect the wall. A circular trench, the circumference of the silo, is made; it should be 8 or 10 inches deep and 8 to 10 inches wide. This trench should be filled with concrete, which is made by mixing six parts of good clean sand or gravel with one part of good new cement. This foundation should then be extended 12 to 14 inches above the level of the ground and the dirt graded up to it to provide for good drainage away from the silo.

The forms for this rim consist of two circles made from 1x6 fencing, made sigle, and sawed to fit the in-

(Continued on page 14)



DOSORIS PARK LILY

A Jersey cow with 1915 championship honors. She produced in 365 days 16,728 pounds of milk containing 957.4 butter fat. Shortly after this test she dropped a heifer calf which the owners value at \$2,000.

DAIRYING

WHEY BUTTER

Its Manufacture as a By-product Proves Profitable in Large Cheese Factories.

Many cheese factories run the whey through a separator and make butter from the cream thus obtained. This has been found by experience to be so profitable that the dairy experts in the department advise all cheese factories that receive 10,000 or more pounds of milk daily to put in an equipment for making whey butter.

After studying the possibilities of making this kind of butter in American Cheddar-cheese factories, the department, in 1909, co-operated in the equipment of a large factory in Wisconsin for this purpose. The factory, the first in Wisconsin to undertake to make whey butter, has been so successful that last year it sold more than \$3,000 worth of whey butter. The increased price which the factory could pay its patrons for milk forced practically all the other large factories in that county to put in whey-butter equipment, and most of the large Cheddar-cheese factories of that State now make butter of this kind.

Equipment.

The necessary equipment consists of a tank for receiving the whey as it is run from the vats, a large-sized

separator, a combined churn and worker, a rotary pump, and some miscellaneous, but not expensive, apparatus. A 5-horsepower engine is large enough to furnish the necessary power. Room for ice and for setting up machinery will also be necessary.

Separating and Churning.

No great difficulties are found in skimming whey or in churning whey cream. Any separator will skim satisfactorily, though some manufacturers have made special separator bowls for this purpose. The flavor of whey butter is generally improved if the cream separated is pasteurized and 20 to 30 per cent of good starter added. Because of the rennet in the whey cream, sweet milk can not be added directly to the whey cream. The whey cream must be churned at a lower temperature than cream obtained by separating milk. A temperature, below 50 degrees F. gives the best results. After churning, the butter is washed and salt is worked in the same as in making creamery butter.

It has been found that the amount of butter that can be made from the whey from 1,000 pounds of milk varies from 2 to 3 pounds, the average probably being about 2.5 pounds. The butter is of fair quality and is used extensively as table butter throughout the cheese districts in Wisconsin. It is sold a little below the regular price paid for creamery butter.

Cost of Making Whey Butter.

The first year that the Wisconsin factory made whey butter a record of the following expenditures was carefully kept:

Repairs	\$25
Ice	40
Interest on investment.....	40
Depreciation, at 10 per cent.....	80
Oil	5
Salt	7
Belts	9
Butter paper	9
Coal, 1 1/4 cents for each pound of butter made.	
Labor, 2 1/2 cents for each pound of butter made.	

All items except coal and labor would be practically the same for all factories regardless of size.

Dividing the Profits.

Factory managers have adopted different methods of settling with the farmers. In Wisconsin some of the factories give the farmers one-half of the returns, while others pay them 3.5 cents for the butter fat in the whey from each 100 pounds of milk delivered. Where a central creamery is required for churning the cream from a number of factories, a plan tried in New York was to give one-third of the gross receipts to the cheese factory, one-third to the churning plant, and one-third to the farmers.

Advantages to the Farmers.

A factory which receives 10,000 pounds of milk a day during the flush season should receive 2,000,000 pounds for the year, or enough to make 5,000 to 6,000 pounds of whey butter. This is enough to pay the cheesemaker for his labor and operating expenses and leave a considerable amount to be paid to patrons. In factories doing a larger business the patrons' profits would be proportionately larger. Many cheesemakers doing a much smaller business have put in equipment for separ-

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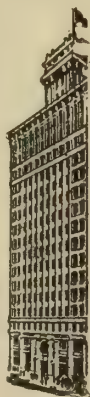
Records of deposits of
this institution.

1912	\$3,200,000
1913	3,800,000
1914	4,500,000
1915	5,300,000
July, 1916	6,500,000

**AN INCREASE OF
\$3,300,00, MORE THAN
DOUBLED IN FOUR
YEARS.**

**Walker Brothers
Bankers**

SALT LAKE CITY





LOUDEN

BOOK OF BARN PLANS FREE

Going to Build or Remodel a Barn?
HERE'S A TIP FOR YOU
We can secure for you, without charge, a copy of Loudon's dollar book of BARN PLANS, 112 pages of the most practical barn plans ever published. Treats every phase of modern barn construction. Shows plans for more than 75 barns, with estimated cost of each. Shall we order a copy for YOU?

AND HERE'S ANOTHER
We handle the complete line of Loudon Sanitary Barn Equipment, including Steel Stalls and Stanchions, Hay Tools, Litter and Feed Carriers, Door Hangers, "Everything for the Barn." We want to show you these time and labor savers. They are the best you can buy and the cheapest in the end. Let us quote you on your complete equipment.

MILLER-CAHOON COMPANY
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Makes More Milk

The feeding of Sunripe Stock Feed is the economical way of aiding nature to increase the milk productivity of your cows.

This feed is well-balanced and highly nutritious, contains just the right elements, in correct proportions, for feeding cows.

It improves the health of any herd, and more than pays for itself with the extra milk it produces.

Order from your dealer, give it a fair trial and you'll be pleased with the results.

Utah Cereal Food Co.
Ogden, Utah.



ating whey, but a different method of settlement with the farmers was necessary. If the farmers are willing to accept one-third of the gross receipts, as they were in New York, cheese-makers can afford to equip their factories for making whey butter even when handling a comparatively small quantity of milk.

The sum distributed among the patrons is a clear profit above what they receive when whey butter is not made, as the whey, after removal of the fat, can still be used for feeding farm animals. The fat in the whey represents a comparatively small part of the feeding value. Ordinarily, the greater part of the fat rises to the top of the whey in the tank and can be seen as a dirty scum, which farmers hesitate to put into cans used for milk.

In view of these facts the dairy experts in the department are decidedly of the opinion that it is to the best interest of the cheese factory and of the farmers that whey butter be made in all factories receiving milk enough to warrant the expenditure for equipment.

CATTLE RANCH

500 acre ranch located in best cattle country, joins best free range, put up 300 tons hay, will support 500 head of cattle now. All machinery new. Price complete, only \$15,000. FEDERAL LAND CO. Eccles Building Ogden, Utah

POULTRY

HOT WEATHER HINTS FOR POULTRY RAISERS H. L. Kempster

As the chicks grow they need more room. It does not pay to let them crowd.

Beware of musty, mouldy, sour or decayed food. It is sure to cause trouble.

Tough grass is of no value as a green food. Better sow some quick growing crop.

Feed hoppers greatly reduce the work. If they are kept filled, the chicks will never go hungry.

If your chicks are not doing well something is wrong. Look out for lice and for worms in the intestines.

Two-year-old hens had better be sent to the market. They seldom pay for their feed if kept over a third season.

Grit and oyster shell should be included in the ration for both young and old. To neglect this would be poor economy.

Young stock will do better if not compelled to pick their living with the old. There will also be less trouble from lice.

Shade is one of the most important essentials during the hot months. Get the chicks into the orchard and cornfield. It is not too late to plant sunflowers.

A growing chick will not thrive on short rations. If the right kind of food is fed, there is little danger of overfeeding, especially if they are given plenty of range.

Supplement the regular feeds with a wet mash—fed crumbly. Feed all the chicks will clean up before going to roost, but none should be left in the trough for it will sour.

Mark the pullets this fall so that you will know just how old your hens are. A leg band on the right leg one year and on the left leg the next will assist in culling the flock. A hog ring will serve the purpose.

SOME LITTLE BIG-THINGS IN GOOD EGG PRODUCTION C. C. Lamb.

1. Gather eggs at least once a day. In hot weather or under muddy conditions twice a day.
2. Do not keep the eggs near any substances having a strong odor, such as kerosene or vegetables.
3. Keep eggs in a cool, reasonably dry place. Keep in a temperature of not higher than 50 degree to 0 degrees. Between 35 degrees and 45 degrees is best.
4. Make a practice of cleaning all soiled eggs the same day gathered. The egg shell is porous and bacteria remaining on the egg can penetrate and contaminate it.
5. In cleaning, do not put the eggs in water. Use a damp cloth to wipe the shell only where there is dirt to remove. When necessary some abrasive substance (as Bon Ami or Sapolio) may be used on the cloth.
6. Keep a litter of clean straw 6 to 8 inches deep on the floor of the houses. Provide enough nests (with plenty of clean straw in them) to prevent the hens crowding while laying. Results, fewer dirty and cracked eggs.
7. After the breeding season is over, strive to produce infertile eggs. It will require about twenty days after

1 Gal. more milk per Cow—at 33 1/3% less Cost



That's what

Mr. W. F. Eldridge of the Premier Ranch, Corona, Cal., says about Larrowe's Dried Beet Pulp.

—Hundreds of other dairymen will tell you of similar satisfactory experiences with this succulent vegetable feed. It not only increases the production of milk but improves the health and physical condition of the cow.

ALFALFA & DRIED BEET PULP

—a perfectly balanced ration.

—Official tests by experiment stations and well known authorities prove that a ration composed exclusively of alfalfa and dried beet pulp contains the proper proportion of elements necessary to enable a cow to do her best. Silage is not needed, for dried beet pulp has equal or greater succulence with five times as much nutriment.

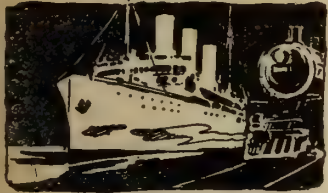
—Read what one of California's most noted breeders says:

—“We do not consider corn silage an economical feed where dried beet pulp can be obtained for \$30 per ton or less; for the simple reason that it is necessary to supplement a ration of alfalfa and corn silage with a liberal ration of high-priced grain in order to get the cows to do their best, while even the heaviest producing cow will give practically as much milk on a ration of only alfalfa and dried beet pulp as on the most concentrated grain ration. We have proved this absolutely by the official scales and test.”

—Test it for yourself. Go to your feed dealer and order a single 100-lb. sack. Ask for “Larrowe's.” Try it with one cow whose milk record you know—and watch results.

SEND FOR “PROFITABLE FEEDING” —a booklet that we have issued, giving feeding instructions and valuable information. Sent free on request.

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No matter how small the job all concrete should be thoroughly mixed. The old method of shoveling is tiresome from a physical standpoint and is very unsatisfactory for consistent mixing.



Our foot, steam or gasoline power mixers will solve the problem for you. Made in several sizes and endorsed by all who have used them. Made in Utah

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HELPED OUT BY FATE

“Yes,” said the London coster, “it was superstition as made me marry my cou’s’n. It was a toss-up atween her an’ Mary, an’ one day I was thinking which of ’em to have—Mary or Anna—when I saw a cigar on the ground. I picked it up, an’ I’m blessed if it didn’t say on it, ‘Havanna,’ so I took her.”



*** Combined with the ***
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Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers Association.

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We guarantee every subscriber against loss thru dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

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There is more than one reason why the farmer should be efficient. Farming is a combination of home, factory, office, warehouse and selling organizations.

We see by press reports that other western states have already started a movement to secure one of the Federal Land Banks which were created by the Rural Credit law. Why are we behind in this matter? We never get anything we do not go after.

WATER SUPPLY FOR BARNYARDS

One of the commendable things to be found in any well arranged barnyard is a good supply of water for all the livestock. It should be so arranged and piped into corrals that all animals have access to it. The cattle, sheep, hogs, or chickens should all have a chance to get plenty of water during this hot weather.

Plan so that the water will run, and not stand in troughs or corrals. You know how a good drink of fresh cool water pleases you on a hot day—well, give the cattle such a privilege.

DON'T BURN THE STRAW

While the practice of burning straw has never been very general in this state, there are a few who burn their straw and burn the stubble. The best way to handle the straw is to work it into manure with livestock. If this can not be done one can use a straw spreader to good advantage

and plow the straw under with out much trouble.

Straw is rich in potash and when it is returned to the soil it helps to supply the ground with a material that is helpful for producing better crops. It is wrong to waste anything that is useful and the practice of burning straw and stubbles should be stopped.

CARE OF THINGS

Some people have a way of making their machinery and implements last longer than others, and in nearly every case it is because they take care of them. It is just as easy to take care of them as not. When you have finished using a tool or implement it should be put away—taken care of. Have a place for every thing and see that they are kept in their place. Look them over and if their is something that needs repairing, no matter how small, attend to it. Oil the machinery, to help keep it in good order. A little paint will help the lasting qualities of nearly any machine. Above all protect your implements from the sun, rain and winter storms. It is the proper care that you give your machinery and tools that makes them last, extend their service for a much longer time.

USE A PAIR OF SCALES

To the dairyman a pair of scales are just as essential as a saw to is to a carpenter. Without the scales it is impossible to tell anything about the profits or losses on each cow, and many a dairyman's lack of success is based entirely on the fact that he has more cows in his herd which are not paying for their food than cows which are really netting a profit. Get a pair of scales and keep a record. The results will astonish you.

The Federal Government is warning the people against buying so called "Infantile Paralysis Cures" and "Preventatives." They also warn housewives against extravagant claims being made for a substance sold under various names for use in making vinegar, beer, wine, and kidney cures. This sometimes goes under the name of "Vinegar Bees," "Beer Bees," "California Bees" etc.

VISIT YOUR NEIGHBORS

This is the time of the year when the farmers should visit their neighbors. Not only those who live in the adjoining cities, but also those who live in other counties, or in some special district where that branch of farming is emphasized in which you are interested. Last year a number of these kind of visits were successfully carried out by the county demonstrators, who planned the trips, taking many farmers from place to place and showing them what other successful agriculturists were doing.

The merchants and the bankers should go along with the farmers, so they can learn at first hand what is being done by the farmers in their own communities, this is a good way for them to get acquainted. The success of these visits depends on how well they are planned as to the little details.

When talking with a farmer the other day he said that he learned one thing from his trip last year, and that it was worth a whole month's time to him.

These neighborly visits are educational and also a pleasure. Now is the time to plan and make a visit through your county.

PROFITS FROM PUREBREDS

It costs money to raise an animal and for that reason the animal that will mature the earliest and bring the best returns will prove the most profitable.

The value of a purebred sire is illustrated by an experience of two Utah ranchmen. They both grazed their stock on the national forest range under grazing permits, controlling the same amount of range each per head and both paid the same grazing fee. Practically no difference except one, and that was, one had used registered purebred bulls, the other had not. The owner of the steers by purebred bulls actually received \$40 per head more on the market than the other fellow whose steers were sired by non-registered bulls. They were on the market to sell their steers under the same conditions the same day. The one had better steers from several points of view and brought better prices. A better argument for purebred sires has not been produced for a long time.

SCHOOL CREDIT FOR FARM TASKS

For years the Utah Farmer has advocated that the schools should help the boys and girls of the different communities to solve their problems—should arrange their studies so that it would help them in their daily work.

The idea that certain practical work done by boys and girls on the farm should count as credits in the agricultural courses of the rural elementary and high schools is growing rapidly in popularity among educators. The basis of this idea is the belief that the farm may and should become the logical laboratory for testing out and putting into practice much that is taught in the schools, and that the schools by giving credit for home work can and should encourage boys and girls to make profits for themselves or to become more directly helpful to their families. The real co-operation on the part of the parent is essential and must play in any plan for making school and farm work closer together in the interests of agricultural education.

WEEDS ALONG DITCHES AND FENCES

When traveling through one of our counties in company with a very careful observer we were impressed with the careless manner in which weeds and vegetation were allowed to grow along ditches, in fence corners, and along the road and paths.

Do we realize that every weed plant we allow to go to seed this year will mean thousands of additional plants for us to fight next year?

Another thing that we do not always consider is the plants that are growing in these places are always those that are most hardy and persistent, often the very hardest to destroy.

A few hours spent now killing these weeds will mean the saving of time next year. Every one should first put their own place in good condition and then encourage their neighbors to do likewise.

The commissioners of Salt Lake County have been asked to enforce the weed law. We hope they will see that the real estate men or property owners who are holding their land waiting for it to advance in price without cultivating it, allowing weeds to grow on it, will be made to destroy all the weeds thus preventing them from going to seed.

THE FIELD SELECTION OF SMALL GRAINS FOR SEED

(Continued from page 3)

reason why home-grown seed is better than imported. His ideal must not change nor must his grip weaken by unwise choosing. Only the best can be tolerated. In all cases it must be remembered that the whole plant is the unit of selection. One kernel of wheat is as good as any other kernel from the same plant, for each seed will tend to produce a plant like the one from which it came. Of course, if a stool of wheat or a stalk of corn has more room, better soil, or more favorable conditions in which to grow, it produces more than one not so favored. On this account, it is not fair to judge plants in different conditions against each other, because it is impossible to tell how much is due to greater food, moisture, or room and how much to superior qualities in the plant itself. Therefore, field selections ought to be made in such a way as to choose plants that product exceptionally well in spite of the fact that they had no advantage whatever. This gives a starting point for a seed plat.

Seed Plats

Every farm of considerable area should have one or more seed plats according to the size of the farm and the number of important crops that are planted each year. If even moderately large acreages of wheat, oats, barley, corn, or potatoes are being grown, the farmer can well afford an acre, more or less, to be cared for as a seed crop. By this practice there is little chance of losing, and much of gaining. It should provide better seed for the farm and even if the crop is marketed it is likely to bring higher returns than any other acre of the same crop. Indeed many farms are devoted largely to the production of clean, high-yielding seed for sale at prices considerable above that of the ordinary product. Of course the plat or farm so handled will require a little extra care, but not so much as a person might expect from a rough estimate.

Choose a Good Patch.

To start field selection, let the grower go to a field that is going to yield heavily at harvest time. This field should be his own if he has a good heavy yield, but if his stand is not good it is unwise to choose from it because he cannot be sure the seed is of high-yielding power unless he has had it for several years and knows it to be good and can account for the present poor or moderate yield in a rather definite manner.

Select Good Plants.

After choosing a field of small-grain that has a really good stand, the farmer should, just before it is ripe, walk carefully through it to find the part where the stand is fullest and most uniform. Then let him examine the individual plants,—the stools, not the separate stalks. The best plant is the one that bears the most grain. Such a plant will usually have a relatively large number of stalks and moderately large heads that are near enough the same height to permit uniform binding or heading. The large heads are likely to be in the small stools, but if the kind of plant just described has large heads, so much the better. As large a number of the best plants as is convenient should be chosen and pulled up in such a way as to preserve the plant entire and

A Great Increase in Railroad Wages Means Higher Freight Rates and a Burden on Agricultural Prosperity

Do you think the railroads ought to increase the wages of their highly paid train employees \$100,000,000 a year?

No great increase in railroad wages can be made without directly touching your pocketbook. Out of every dollar you pay the railroads 44 cents goes to the employees.

Compare the wages of these men (who have refused to arbitrate their demands for higher wages, and are threatening to tie up the country's commerce to enforce them) with those of other American workers—with yours.

On all the railroads in 1915 three quarters of the train employees earned these wages:

	Passenger		Freight		Yard	
	Range	Average	Range	Average	Range	Average
Engineers -	\$1641 3983	\$2067	\$1455 3505	\$1892	\$1005 2445	\$1526
Conductors -	1543 3004	\$1850	1353 2932	\$1719	1055 2045	\$1310
Firemen -	943 2078	\$1203	648 2059	\$1117	406 1633	\$924
Brakemen -	854 1736	\$1095	755 1961	\$1013	753 1821	\$1076

You have a direct interest in these wages because the money to pay them comes out of your pocket.

Low freight rates have given American farmers command of the markets of the world.

With two-thirds of the cost of operating railroads the wages paid labor, any great increase in labor cost inevitably means higher freight rates.

A \$100,000,000 increase in railroad wages is equal to a five per cent. increase on all freight rates.

The railroads have urged that the justice of these demands be determined by the Interstate Commerce Commission (the body that fixes the rates you pay the carriers), or by a national arbitration board. The employees' representatives have refused this offer and have taken a vote on a national strike.

This problem is your problem. The railroad managers, as trustees for the public, have no right to place this burden on the cost of transportation to you without a clear mandate from a public tribunal.

National Conference Committee of the Railways

ELISHA LEE, Chairman

P. R. ALBRIGHT, Gen'l Manager,
Atlantic Coast Line Railroad.
J. W. BALDWIN, Gen'l Manager,
Central of Georgia Railway.
C. L. BARDO, Gen'l Manager,
New York, New Haven & Hartford Railroad.
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Erie Railroad.
G. S. WAID, Vice-Pres. & Gen'l Mgr.,
Sunset Central Lines.

uninjured. Of course no stool that has had extra room, moisture, manure, or advantage in any way whatever should be selected. On the other hand, if a good plant is found in rather unfavorable surroundings, it may be valuable. But by all means the selection should be made in such a way as to make sure that the extra yield is due to inherent qualities in the plant

rather than to some favoring condition. These plants should be arranged in a row by themselves and further examined to prevent any flaw (Continued on page 13)

The World's Most Low Priced Announcing the

31 1/2

Horsepower

Overland

TRADE MARK REG.

This newest Overland is the world's most powerful low-priced car.

It has a 31 1/2 horsepower en bloc motor that is a perfect marvel for speed, power and endurance.

By increasing the bore of the motor from 3 1/8 to 3 3/8" we are able to offer a power plant which at 1950 R.P.M. develops full 31 1/2 horsepower.

Tests under every condition in all parts of the country demonstrate that it easily develops better than fifty miles per hour on the road.

Speed of course varies under different conditions, but in practically every instance

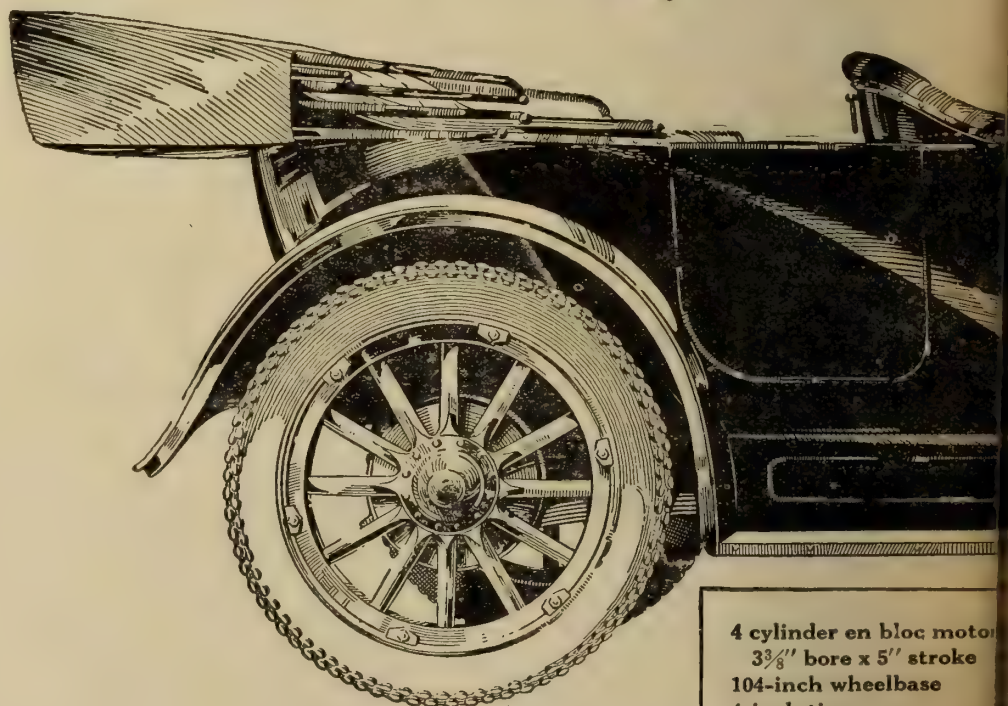
it has been getting fifty miles an hour and with ease.

We have scores of telegrams showing that eighteen to twenty-five miles per gallon of gasoline is not unusual.

The performance of this car is almost beyond belief.

Take any other low-priced car on the market. Pit it against this new Overland. Compare them for sheer speed, for abundance of power, for riding comfort and economy, and you'll find this car will back anything else clean off the boards.

That's a strong statement, but a fact nevertheless.



4 cylinder en bloc motor
3 3/8" bore x 5" stroke
104-inch wheelbase
4-inch tires

Catalogue on

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Most Powerful Speed Car

The New Series

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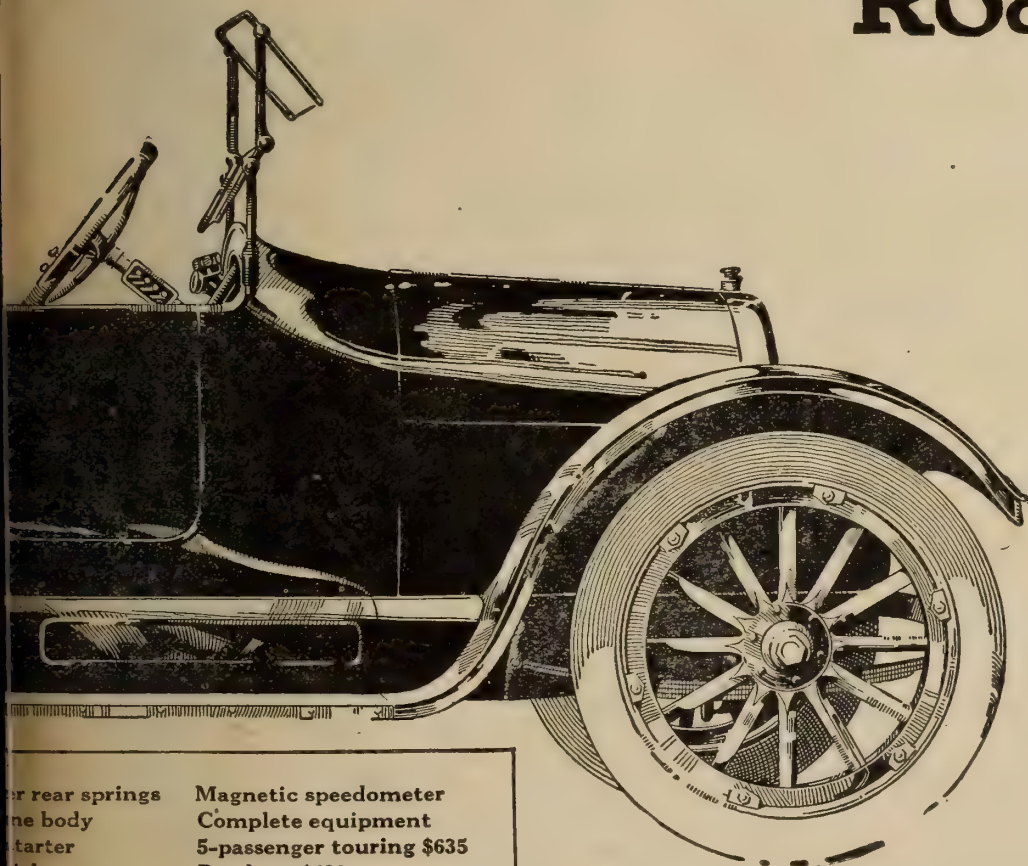
Land

\$ 635

5 PASSENGER TOURING CAR

Roadster \$620

f. o. b. Toledo



er rear springs	Magnetic speedometer
ne body	Complete equipment
starter	5-passenger touring \$635
lights	Roadster \$620

Try it yourself and see. Here are more important facts.

It has four-inch tires which are more than generous for a car of this size.

Not only has it a large and roomy body, but it has an attractive, up-to-date streamline body.

It has the latest and most improved system of ignition.

It has the cantilever springs—the easiest riding springs in the world.

What's more, it's complete. Not a thing to buy. You get the finest Auto-Lite electric starting and lighting system, magnetic speedometer, one-man top, demount-

able rims and practically every accessory found on the highest priced cars.

From a driving standpoint, the new car is ideal. It's light, easy to handle and anyone can drive it.

Take one look and be convinced.

And mark these words — the car is destined to be regarded and referred to as one of the really great achievements of the great automobile industry.

Yet it only goes to prove how big production can cut cost and save you money.

First come, first served. See the nearest Overland dealer and place your order now.

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This 100% greater wearing surface naturally gives that much more mileage and service. The average of 12 miles of tough fabric and one inch surface tread rubber makes these tires absolutely punctureproof.

These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—the air space and pressure being the same.

They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use in the U. S. government and European War service.

Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer:

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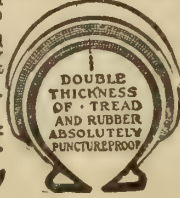
Tires Tubes	Tires Tubes	Tires Tubes	Tires Tubes
30x3 in. \$8.60	32x4 in. \$17.45	36x4 in. \$17.45	36x4 in. \$17.45
30x3 1/2 in. 10.85	32x4 1/2 in. 21.20	36x4 1/2 in. 21.20	36x4 1/2 in. 21.20
32x3 1/2 in. 12.75	36x4 3/4 in. 22.50	36x4 3/4 in. 22.50	36x4 3/4 in. 22.50
32x4 in. 15.75	36x4 3/4 in. 22.50	36x4 3/4 in. 22.50	36x4 3/4 in. 22.50
34x4 in. 16.70	36x4 3/4 in. 22.50	36x4 3/4 in. 22.50	36x4 3/4 in. 22.50

All other sizes not included in above list also furnished. Non-skids at 10% additional.

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Size	Plain T.	Non-S.	ALL OTHER SIZES
30x3	\$9.27	\$10.85	
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32x3 1/2	13.82	16.16	
34x4	20.16	23.58	PROPOR.
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HOME

CAKE MAKING IS A SCIENTIFIC PROCESS

Edith C. Salesbury, Arizona A. C.

In cake-making sugar and flour are combined to make a sweet batter. The lightness is obtained by entangling air in the eggs and by the formation of a gas resulting from the union of soda and cream tartar baking powder—with a liquid; or with soda and sour milk. Since sugar and eggs burn easily a more moderate heat is required in making cake than for bread or biscuits.

In sponge cake or cakes made without butter the lightness is often entirely obtained from the expansion of air in egg albumen and a very slow oven is necessary in baking.

Utensils—Those generally used in cake-making are, mixing bowl, measuring cups, mixing spoon (wooden or granite), measuring spoons (table or teaspoon), cake pans (tin or aluminum), flour sifter, egg beaters (wire or Dover).

General Rules—1. The oven must be ready for baking as soon as the cake is mixed.

2. All utensils and ingredients should be ready before mixing the cake.

3. The cake pans should be well greased and dusted with flour to prevent sticking and to produce a dry, golden-brown crust.

4. Sift flour before measuring. Once of twice sifting after measuring makes a lighter cake. Pastry or soft wheat flour is best.

5. Fine granulated sugar should be used. If powdered or brown sugar is required, roll or sift it to free from lumps.

6. Vegetable fats, as crisco and cottolene; chicken fat, a mixture of lard and butter, beef fat and butter may be substituted for butter as shortening with very good results.

7. Water, substituted for milk, makes a more delicate cake.

8. Thoroughly creaming butter and sugar together makes a fine grained cake of delicate texture.

9. Whole eggs or egg yolks may be added unbeaten, one at a time, to the creamed butter and sugar and if thoroughly beaten, will give quite as good results as when beaten in a separate bowl before adding to the butter and sugar.

10. Egg whites should be beaten on a plate or platter with a wire whisk or fork in order to entangle the greatest amount of air in them.

11. Milk and dry ingredients may be added alternately to the creamed butter and sugar.

12. Flavoring is added last.

13. If stiffly beaten egg whites are used, they should be gently folded into the batter after all mixing and beating are finished.

Baking—The time for baking should be divided into four quarters, the first quarter for rising, second and third quarters for browning and the last quarter to finish cooking inside of cake. This is done at a lower temperature than the browning of the cake. The oven should not be hot during the first quarter as during the second and third. Cakes containing whites of eggs stiffly beaten should be baked in a very moderate oven. Cakes containing chocolate, molasses and

Parowax

The Safest and Surest Way

to keep the fresh fruit flavor in your preserves and jelly is to use Parowax for sealing the jars and glasses. It's the economical way too. It makes them air tight and prevents all mold and fermentation.

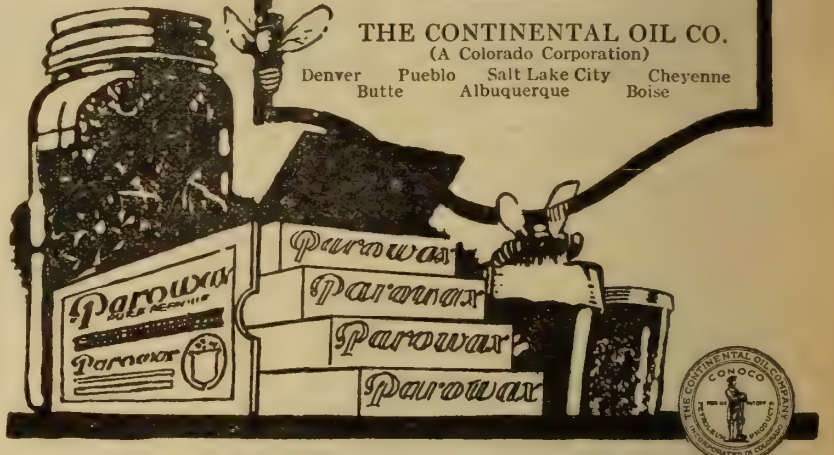
Parowax is guaranteed under the Pure Food and Drugs Act. It is sold by reliable dealers in one pound cartons.

There'd be a lot more honey if bees knew about Parowax.

THE CONTINENTAL OIL CO.

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Keep the Natural Flavor In Your Fruit

See that the fruit you put up this year is freshly picked; also see that the sugar used is "Utah-Idaho." Two important things. You will then be reasonably sure of success.

In the winter you will appreciate the fresh, firm, delicious fruit mother put up.

Utah-Idaho Sugar is preferred because it is pure and dependable. It helps "keep" the fruit.

UTAH-IDAHO SUGAR

ABSOLUTELY PURE

fruits, require a slower oven than plain butter cakes. Average time required for a layer cake, 25 minutes; for a loaf cake, without fruit, 40 minutes to one hour, depending on size; with fruit, molasses or chocolate, 10 to 15 minutes longer. A well baked cake shrinks from the side of the tin and springs back when pressed with the finger. The broom straw test is most reliable for loaf cakes. Pierce the cake with a clean straw, if batter clings to it when withdrawn the cake is not sufficiently baked.

Favorite Cake—One third cup butter, one cup sugar, two eggs, one-half cup of milk, one and three-fourths cups of flour, two and one-half teaspoons of baking powder, one teaspoon vanilla or other flavoring.

Cream the butter and sugar together gradually, add eggs one at a time, and beat until light; then add milk alternating with the dry ingredients sifted together. Bake in two layer or one loaf tin.

Silver Cake—One third-cup butter, one cup sugar, one-half cup milk, one and three-fourths cups flour, two and one-half teaspoons baking powder, whites three eggs, one teaspoon flavoring, vanilla or a mixture of vanilla and almond.

Cream the butter and sugar together; add milk gradually, alternating with dry ingredients sifted together. Add flavoring. Last fold in lightly the stiffly beaten whites. Do not beat cake after the egg whites have been added.

Sunshine Cake—One-fourth cup butter, one cup sugar, yolks three eggs, one-half cup milk, one and three-fourths cups flour, three teaspoons baking powder, one teaspoon flavoring.

Direction same as for Silver cake, except egg yolks are added one at

a time to the creamed butter and sugar and are beaten until very light. Both these cakes make two medium sized layers.

Cream Frosting—One cup of granulated sugar, one teaspoon of corn starch mixed together, add



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Be So Good
I Just Can't Wait"**

"If you've ever tasted the big, tender, tasty, light biscuits, doughnuts, cakes and other things made with Calumet you can't blame me for being tempted.

"Mother sticks to Calumet because, like millions of housewives, she knows it means sure, uniform results—better bakings every bake day—purity in the can and purity in the baking. Calumet is economical to buy and to use. Try it now on the money back guarantee."



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Low-priced, fresh, reliable; preferred by western stockmen, because they protect where other vaccines fail.
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Use any injector, but Cutter's simplest and strongest. The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.
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three tablespoons of boiling water, set on the back of the stove until sugar is dissolved, then boil two and one-half minutes, taking time when syrup is bubbling in the center. Remove quickly from the fire and pour slowly over the stiffly beaten white of one or two eggs. Beat constantly until the right consistency to spread over the cake, that is, until the frosting will almost hold its shape when piled up. Flavor with one teaspoon of vanilla.

This frosting is easily made if water is measured exactly, if sugar is dissolved before syrup boils and if the time of boiling is carefully watched.

Chocolate Frosting—One and one-half squares of chocolate or one-third cup of cocoa, one-half cup hot milk or thin cream, few grains of salt, yolk of one egg, one-half teaspoon butter, one-half teaspoon vanilla, powdered sugar.

Melt the chocolate over hot water and add to the hot milk gradually; add the beaten egg yolk and other ingredients, and when slightly cool add sugar gradually until the right consistency to spread—about two and one-half cups.

CO-OPERATION

Nothing happens without co-operation. That the simplest thing may happen the whole of Nature co-operates, as in the forming of dewdrops, for instance. Co-operation has been the spirit, the backbone, the prime essential of every success, whether of business or science, transportation or education, mechanics or politics, government or diplomacy.

Every employer judges his employees by their ability to co-operate. Subordinates progress, other things being equal, according to their capacity and willingness to co-operate. Executives retain their positions only if they co-operate successfully with other executives and maintain co-operation among their workers.

Eliminate co-operation and we would have no railroads, no steamship lines, no department stores, no great manufacturing establishments, no music, no books, no government. Chaos would exist.

Since, therefore, co-operation is essential, common sense dictates that it should be hearty and complete.

Co-operation in business life means more than merely obeying orders. It means working with one's fellow-employees wholeheartedly. It means avoiding the friction of conspiracy, grouch, deceit, time-serving, selfishness, indolence and inattention. It means team-work. The pennant-winners of commerce are those who have best solved the problems of co-operation.—Ex.

Enough

Nora had asked for a letter of recommendation, which the circumstances of her leaving, and the quality of her work made it very awkward for the manager to write. Eventually, after much fruitless scribbling, and waste of paper, he produced this:

"This is to certify that Nora Foley has worked for us for a week, and we are satisfied."

And now a cemetery in St. Joseph, Mo., advertises that "graves will always be cared for, no matter where you go."—Exchange.



The Refreshing Charm of good tea is in its delicate flavor

Unfortunately, the world is not full of good tea. You must choose with care. Those many women who use Schilling's Best know that the cost of good tea is very, very little. But this is not the only reason for their preference. Another reason—a very real reason—is that each of the four taste-types (Japan, English Breakfast, Ceylon, Oolong) brews tea of indescribable charm.

Send for the Taste Packet

which makes it easy for you to find the type of tea that you like best. Contains four parchment envelopes of Schilling Tea—Japan, English Breakfast, Ceylon and Oolong. Enough for five or six cups of each kind. Mailed promptly on receipt of 10 cents (stamps or coin).

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Farm machinery against friction and wear, by keeping all moving parts thoroughly lubricated. It's the correct farm lubricant for this climate. Order a can today.

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Refiners

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Successful Farming

The size of business often has much to do toward making the farm profitable.

Here is a small farm of 50 acres, **JUST WHAT YOU WANT**, with a rich, black loamy soil. Well adapted to the raising of beets, alfalfa, fruit, garden truck, etc. Good market for the garden truck near by. A good permanent investment for a man that wants an ordinary sized place that he can make a good profit out of.

Prior water rights at \$1.00 per acre if used.

See or write—today

W. C. ALBERTSON

604 Dooly Bldg.
Salt Lake City, Utah.

BETTER FARM HOUSES

L. H. Bailey.

"By way of concrete suggestions, I will throw my statements regarding better farm houses into classified paragraphs. These suggestions apply to common farm houses rather than to the estates of country gentlemen.

"1. Plan a waterworks system with a supply coming from an elevated tank in the barn or in the attic, from a pneumatic tank in the cellar, from a pneumatic cistern, from a creek or a well or a spring at an elevation above the house, or from a hydraulic ram.

"2. Plan a compact room arrangement that will allow a woman with two or three children to do her work without servants, and also to have some time for reading and social activity.

"3. Consider how a hired man may occupy a room which has a separate entrance from the remainder of the house, and yet which may be under family control.

"4. Plan the addition of outdoor sleeping facilities. Add a fireplace to the old farm house.

"5. Plan a house with an accessible and attractive back door or work entrance.

"6. Plan a lighting system either by acetylene gas, electric light or other means that are now available. Extend this system to the barns if practicable. Also devise a way to heat the house.

"7. Plan a plain work-room or retiring room for the women of the family, particularly for the wife and mother. This should be a retreat room that is free from the cares and noise of the remainder of the house, containing perhaps a few books and other means of recreation.

"8. Provide an office that shall be the business nucleus of the farm plan. This office should be easy of access, on the first floor of the house, rather than in the attic or in the barn. It should have an outside entrance, as well as connection with the living-room.

"9. Figure out a system of storage rooms that will hold the family supplies and such products as need to be sold or handled from the residence, assuming that the family is six persons, and the place a general farm of one hundred acres.

"10. Plan the simplest and most compact arrangement of rooms, so as to accommodate properly a family of six persons on a farm of one hundred and fifty acres.

"11. Plan a garden or a yard that shall be a real supplement to the house. I do not now have in mind so much the raising of vegetables and fruits for the household supply as the providing of pleasant outdoor spaces for reading, sitting, dining, and the like. Every opportunity should be seized to get the farmer and his family out-of-doors, since contact with nature in hours of leisure will add much to the resourcefulness of their lives."

MOVING MERCHANDISE

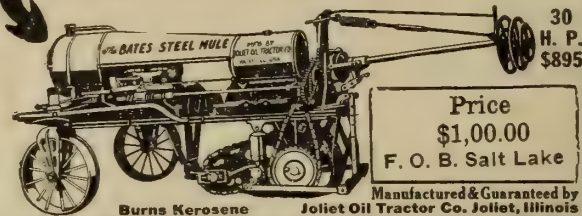
Two forms of advertising that are especially productive of results for the retail dealer are newspapers and circular letters. If you want to write your own copy and do not know what to say, just put yourself in your customer's place and write just what you know he would like to hear with interest if you were talking to him in your own office. This should give a personal touch to your ad. You can get ideas from any "ad" you see and then rewrite the "ad" to suit yourself.

A "One-Man" Tractor For Every Farm Operation!

The great success of the Bates Steel Mule among thousands of farmers is due to these definite facts:—It is the only real one-man machine built—every farmer can do more different jobs with it more days a year than with any other tractor—it works on any soil, wet or dry—and its price is right.

Bates Steel Mule

No new implements are needed. Your old tools will do the work cheaper, quicker and better when hitched to a Bates Steel Mule. Come in and let us tell you all about it.



Price
\$1,00.00
F. O. B. Salt Lake

Burns Kerosene

Manufactured & Guaranteed by
Joliet Oil Tractor Co. Joliet, Illinois



One Man Harvests 40 Acres a Day.



One Man Plows 10 Acres a Day.



One Man Drills 50 Acres a Day.

Machines on hand and ready for delivery

Call or Address

Utah Implement & Vehicle Co.
SALT LAKE CITY

TRUE ECONOMY

CHEAPNESS

is not based on what you pay but on what you get for what you pay.
That's why you should buy

SCOWCROFT'S

NEVER-RIP Overalls and "MADERITE" Shirts

TRY THEM. They will give you more comfort and service for your money than any others you can buy.

UNION MADE

and they always give
Satisfaction

John Scowcroft & Sons
Co.

Ogden, Utah.

The Utah Work Clothes
Manufacturers.

EAR PERFECT TAGS
Samples Free

ATTACHED INSTANTANEOUSLY
Name and Address. Numbered if Desired.
LEG BANDS for Poultry, Pigeons, Turkey
SALT LAKE STAMP CO. Salt Lake, Utah.

But remember—to make it move—two things are necessary and only two: Modern advertising and modern merchandising.—Imp. and Vehicle Record.

A man's reputation rises when he settles down, but more so when he settles up.

Garmesa Farms
All records show the
HOLSTEIN to be
The best Cow

Buy a bull calf from an
Advanced Registry Dam

Write us

Fruita, Colo.

Mention Utah Farmer when you write

RELIABLE FARM BARGAINS

Mr. City Man, we have something very special to offer you on a 5-cent car line. Some of the choicest acre tracts in the valley. If you are working in town and desire to have an acre close in, so that you may raise your own garden truck and chickens, we have just what you are looking for at \$500 per acre, very easy terms.

80 acres, near Elwood station. First-class water right. All in high state of cultivation. \$100 per acre. On terms.

40 acres in the Bear River valley. Water right from the Bear River canal. All under cultivation. \$80 per acre; 10 years to pay; 6 per cent interest.

92½ acres, one mile from the station. Some water for irrigation. Water can be had for the whole farm. City water and electric lights near the place. All clear from incumbrance. To exchange for Salt Lake City property.

We have one of the most modern farms in Utah for sale. Was sold one year ago for \$20,000. The man is desirous of moving to California and has instructed us to sell for \$9500.

We have some very excellent farms for sale in southern Idaho on easy terms and low rate of interest.

We exchange farms for city property and city property for farms.

KIMBALL & RICHARDS,
"Land Merchants."

56-58 Main St.,
Salt Lake City, Utah.

Call Farm and Ranch Department
Phone Was. 963.

THE FIELD SELECTION OF SMALL GRAINS FOR SEED

(Continued from page 7)

that may have been overlooked in the field from getting by unnoticed. Any badly-bent or rust-infested plants ought to be discarded because they are weak in these respects.

Care of Selected Seed.

This grain should now be dried in a protected place to prevent injury from chickens or other animals. If any stools show a marked shattering (shelling out) of grain as compared with the others these should probably be cast out as shattering is likely to cause loss when grain must stand in the field for sometime after it is ripe. The original selection must be made when the grain is almost but not quite "dead" ripe in order to observe this quality. Wheat is more likely to suffer in this respect than barley and oats, but some of these grains also shatter considerably.

When all that can be learned about the plants from looking at them is discovered, they are ready for threshing unless they are to be kept separate for planting in rows next season. The grain may be put in one sack and hung in a safe place until planting time arrives when an analysis and germination test can be made. After a seed-bed has been prepared as for other wheat except as much better as possible, the grain save barley should be treated for smut in a solution of formalin one pint to forty or forty-five gallons of water. When dry, it may be sown with a grain drill that is free from weed seed and smut spores. If smutty grain has been used lately is perhaps advisable to rinse the drill with some of the formalin solution.

As the grain grows it should be treated as other fields of the same grain, in addition to being weeded by hand enough times to insure absolute freedom from undesired plants. Just when it is well headed out, the farmer can profitably walk through and pull out any plants that show smutty heads. This enables him to control in wheat another smut (loose smut) from the one he treated for at planting time. It also assists the formalin in the case of oats. All smutty plants should be burned.

Roguing.

A little later he should cull out other grains and grain of the same kind but of a different variety if any should have crept in. This process of hand pulling for cleanliness and for freedom from smut is known as "roguing" which may well continue until time to make individual plant selection. At this time, the process already described should be repeated in the seed plat and the selections saved for next year's plat, while the harvest from the entire plat should be saved for sowing the general crop. This requires that the seed plat be large enough to supply all the seed required on the farm. In a few years, if the farmer will rogue his fields, he may offer seed for sale at an advanced price. Just at present there is an opportunity for men who will be careful to get added profits in farming to going into the seedgrowing business. Judgment must of course be used in this as in other ventures.

People who merely come in "to look" are sold by the energetic clerk—Exchange.

FARMERS

Saved More Than

A MILLION DOLLARS

BY Storing In

Butler Steel Grain Bins

Last Year



RAT PROOF—It is impossible for you to figure up with pencil and paper the amount that you have lost by the destruction of grain by rat and mice.

FIRE PROOF—Insurance money saved will help you pay for a steel bin.

WEATHER PROOF—It is impossible for rain or snow to beat in when properly set up.

BURGLAR PROOF—This gives special value. The extra large door can be securely locked so that theft is impossible.

NEW IMPROVEMENTS

GET DESCRIPTIVE BOOKLET

Consolidated Wagon and Machine Co.

UTAH-IDAHO-WYOMING-NEVADA

Irrigation

Solve the problem. Try a Martin 10 days at our risk.

THE Martin

Cuts and cleans ditches at low cost. Levels land, grades roads. All steel—will last a lifetime. Adjustable for narrow or wide cuts. Reversible. Ask about trial offer. Write for free books.

Owensboro Ditcher and Grader Company, Inc.
324 Evans Block
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SEND US YOUR KODAK FILMS

We Develop Any Size Roll 10¢
We Develop Any Size Film Pack 20¢
Prints Made From Only Good Negatives
We Pay Postage

SHIELDS STATIONERY CO.
KODAK HEADQUARTERS
131 MAIN ST. OPPOSITE KEARNS BLDG. SALT LAKE CITY

THE USE OF



Grease and Motor Oils

Cuts down the cost of lubrication and by detracting from the deterioration of the machinery, cuts down the cost of the machinery itself. An ideal lubricant for farm machinery.

Endorsed by leading miners, manufacturers and agriculturists—it is the best.

Ask any engineer—anywhere.

Write for liberal free sample—Postpaid.

Guarantee Tire & Rubber Company

427-429 South, Main Street
Salt Lake City, Utah.

HOW TO BUILD THE "PIT SILO"

(Continued from page 3)

side circumference of the wall. To these circles is nailed 18 or 20 gauge iron sheeting, which is 12 inches wide. The outside form consists of a single strip of iron, of the same width as the inside form.

Removing the Dirt

A shed should be built over the pit silo to protect the animals from getting into it and to keep out the storm. To the roof of the shed may be fastened a track to be used in hoisting the silage and transferring it into the feeding-alley. This same arrangement will provide for hoisting the dirt and transferring it to a wagon where it can be hauled away.

Another plan provides for three poles placed upright and fastened together at the top, to which a pulley is fastened; and the dirt hoisted up with a horse. Man's ingenuity may devise several other ways which might prove even better than either plan suggested for the removing the dirt.

The dirt should be removed to a depth of five to six feet, care being exercised all the time to keep the walls straight and smooth. In order to maintain a perfect circle it is well to have a post in the exact center, to which is fastened a revolving board, which measures the exact diameter of the pit.

Plastering.

After the dirt, to a depth of 5 or 6 feet, has been removed, it is well to plaster the wall. If done at this time there is little chance for the soil to dry out and crumble, or from pockets or holes in the wall.

The plaster is made by mixing cement and fine clean sharp sand in the proportion of one of cement to two of sand. It should be put on with a trowel and made $\frac{1}{2}$ to $\frac{3}{4}$ of an inch thick. To insure it sticking to the wall, a lime whitewash can be thrown on to the wall, which will dampen the soil and aid it in holding the plaster.

If the soil is sandy and crumbly and does not take the plaster readily, a fine wire netting can be put against the dirt and fastened by driving long staples into the wall and then plaster over the wire.

After the plaster has hardened, the next 5 or 6 feet can be taken out and the plastering continued. This

way of taking out the dirt and plastering insures a good solid wall and does not require any scaffolding upon which to work while the plastering is done.

There are certain kinds of heavy gumbo soils, where it would seem unnecessary to use the plaster, but it must be remembered that the main object of the plaster is to keep out the air and thus save the silage.

Objections are sometimes raised because the plaster might crack, due to the heaving or cracking of the ground, but if this happens it is not serious, because the crack can easily be repaired when the silage is removed.

Silo Floor

It is not necessary to put any material in for a floor. At the depth to which pit silos are usually constructed the soil is very compact and solid and serves the purpose as well as any other material could do.

Cost

If the man building the silo will do the work himself at a time when there is nothing else to do, or that would be a profitable to do, the cash outlay will not exceed \$25 to \$30. The only money required is to pay for the cement and for the material used in constructing the form. One set of forms should be constructed by some organization which is interested in the agricultural development of the community; the Co-operative Creamery Co. the Farmers' Club; the Grange or the banks in the town could afford to build the forms and loan or hire them to any farmer who will build a pit silo.

This set of forms will not exceed in cost \$20 and ought to be used in the construction of 50 silos. They could be hired out at the rate of \$1.00 per silo and pay for themselves two or three times.

1. It is cheap and easy to construct.
2. It will last longer than the average silo built above ground with the possible exception of the concrete silo.
3. It will not be destroyed by fire, wind or other destructive factors which destroy silos above ground.
4. The silage will not freeze. Freezing does not injure the quality of the silage but is inconvenient to handle.
5. It has all the advantages of silos built above the ground with none of their disadvantages.

The Pit Silo has been constructed in large numbers in Western South Dakota and Nebraska, Eastern Wyoming and Montana, and not one single failure is reported.

Precaution.

On farms where irrigation is practiced it is well to locate the silo quite a distance from the irrigation ditch. Gophers might dig channels through the ground and such channels convey the water into the silo. It would be advisable to extend the rim or foundation two or three feet above the ground and grade up the ground surrounding it. This will provide good drainage around the silo.

The merchant may be a good advertiser, a good buyer; his store may be located on the best corner in town, but he can never afford to overlook the fact that after all his business is judged largely by his employees, his salespeople, who serve the public directly and personally.—Merchants' Trade Journal.

Money to Loan On Farms

LIBERAL TERMS

If you need money for additional improvements to buy livestock or any other purpose let us help you.

Because of our long experience in the land business, we are prepared to give you the best service and portection.

Ask any bank in Salt Lake City as to our reliability.

Come and see us or write.

Kimball & Richards

"Land Merchants"

56 and 58 Main Street
Salt Lake City, Utah.

Sunday

and

Week-End Excursions

Via

Oregon Short Line



Travel More
At Slight Cost.

Half Fare
Sundays—
Slightly More
Saturdays to
Mondays.

EACH WEEK

BETWEEN LOCAL POINTS.

This innovation has been established for the purpose of permitting residents in local O. S. L. territory to visit back and forth Sundays and during week ends.

Saturdays to Mondays—

—To encourage baseball games and other sports between different towns.

—To make possible inexpensive outing and fishing trips, and generally to make it possible for our patrons to "get about."

Ask any Oregon Short Line agent for further details, or write,

D. S. Spencer, General Passenger Agent,
Salt Lake City, Utah.

Can Fruit

THIS YEAR

Sugar contains 98 per cent available energy as food, fruit contains 90 per cent—any substitute for these foods costs much more money. You need canned fruit for a properly balanced ration—

IT SAVES MONEY

When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

Gem Herd of Improved Chester White Swine

This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions of the World's Fair held at Frisco this last year. Both Sire and Dam, is still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale at all times.

Address

GEO. H. LAWSHE

Falls City

Idaho

HOLSTEIN BULLS FOR SALE

Sons of Wachusetts Creamelle George the 2nd whos daughters have made from 350 to 500 pounds of butter fat a year just with ordinary care. Wachuett was 2nd prize aged bull at the State Fair last fall and all of his get were first in their class but one. His dam gave 105 pounds of milk in a day that tested better than 4 per cent. No. 1 Iowana George 3rd a fine 18 months old son of Iowana Colanth Alberkerk. A high testing heifer from Iowana Farms, Iowa, her dam has a 19 pound record. This young bull was Junior Champion at the State Fair. The first check for \$200 takes him. No. 2 Wachusetts Beauty a 12 month old son of Maudeline Of Beechwood Beauty with a 23 pound butter fat record, milk test 4.6. She is a full cousin to Colantha 4th Johana, \$150 buys this one. Take no chances, get a bull from a proven sire and one that has produced the goods. Offer several others from 6 months to 1 year old from \$75 to \$125 each.

J. W. STUBBS

Charleston

Utah

BATES AND SONS Provo, R. F. D. No. 1.

Breeders of S. O. White Leghorns and R. I. Red fowls and Airedale Dogs.

UTAH HATCHED WHITE LEGHORN BABY CHICKS \$11.00 PER 100

Circulars, order-blanks, etc., upon request. Candee Colony Brooders carried in stock.

GLENWOOD EGG FARM

R. D. 3

Murray, Utah

WHAT DO YOU KEEP COWS FOR? NOT TO LOOK AT.



WE HAVE THE KIND THAT FILL THE PAIL AND PURSE.

A Reg. Jersey Bull from our herd will improve your cows. The home of **TORMENTOR'S DAIRY KING** No. 140206

Breed for production. R. M. test of dam and G. dam averages 828 lbs. of butter in one year.

Write for description and prices to

A. C. ANDERSON & SONS

2532 Polk Ave.

Ogden, Utah

WANTED AT ONCE

Six expert irrigators, levelers and fresno men. Address

A. G. MACALLAN

Battle Mountain

Nevada

Mention Utah Farmer when you write.

Money to Loan

On improved farms with primary water rights, at reasonable rates.

Quick Service.

We lend our own funds.

**INTER-MOUNTAIN LIFE
INSURANCE CO.**

Home Office

**11th Floor Boston, Bldg.
Salt Lake City, Utah.**

FOR SALE

Two registered Clydesdale mares, three and four years old. One team of draft horses; one driving mare. Call Andrew Knudsen, Supt. Utah County Infirmary, Provo, Utah.

FOR SALE

Three pure bred registered Percheron mares. Must sell at once. One now in foal. Price for the three \$1,000.00. Write or call on **E. D. HATCH**

Heber

Utah

Wanted to hear from owner of good ranch for sale. State cash price and description. **D. F. Bush** Minneapolis, Minn.

WE MAKE

**Farm and Ranch Loans
in Utah, Idaho,
Wyoming, Oregon and
Colorado.**

MILLER & VIELE

**803-7 Kearns Bldg.
Salt Lake City.**

When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

BUTTER WRAPPERS

We carry a large stock of the Best Vegetable Parchment Butter Wrappers and Especially Prepared Ink for Printing the same. We furnish them Postage Prepaid at the following Prices, money to accompany order.

100	.....	\$ .90
200	.....	\$1.25
500	.....	\$2.25
1000	.....	\$3.00

Send all orders to

THE UTAH FARMER

LEHI, UTAH



**THIS YEAR IS THE YEAR TO BUY
HOGS—**

last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again.

The best time to buy is when pigs are young. Write today.

RICHARDS LIVESTOCK CO.

Virginia

**Jesse S. Richards Mgr.
(The West's best Durocs)**

Idaho



BALLAMOAR FARMS

JERSEYS

Richmond, Utah.

BERKSHIRES

Dam Wickett
Sallie 5th
Sired by
Masterpiece
old for
\$2,500.00.



Sire
Rival's Lord
Premier
sold for
\$4,050.00.

Rival's Premier Master 139,600.

Grand Champion boar at two Utah State Fairs. Sire of a dozen champions. The greatest breeding boar and most valuable pig ever owned in Utah. Young stock carrying the blood of this boar for sale at reasonable prices.

CAINE LIVE STOCK CO.

RICHMOND

UTAH

OPENED JAN. 15TH, 1913



**"The HOTEL that's BEST
In all the WEST"**

**WHEN IN LOS ANGELES
STOP at the NEW
FIREPROOF
HOTEL NORTHERN
EUROPEAN**
200 OUTSIDE ROOMS
150 WITH BATH
420 W. 2ND ST., NEAR HILL
NORTHERN HOTEL CO., PROP.
FRANK L. CRAMPTON, MGR.
RATES \$1.00 PER DAY AND UP

A man in order to be a good pig grower must like the work and be willing to look after its many details.

The animal husbandry department of the Utah Agricultural College insists that no hog farm equipment is complete without good disinfecting utensils and they should be frequently used. The old saying that "anything is good enough for the hog" is not true in these days of good farming. Stock raising for breeding purposes and that raised for market

must be treated differently. Corn and alfalfa fed to hogs have been found to make a splendid combination in producing strong pigs cheaply. If sows eat the alfalfa hay there will be no trouble in securing healthy litters. Cooking feed for swine has been abandoned since we have found that the digestibility of most food is lessened by cooking.

Mention Utah Farmer when you write

You can be independent on your own Irrigated Farm at Downey, Marsh Valley, Idaho

"The Land of Opportunities"

Located on the main line of the Oregon Short Line, 95 miles north of Ogden and 40 miles south of Pocatello.

Climate

The climate is similar to that of Cache Valley, which immediately adjoins Marsh Valley on the south. There are no extremes of temperature.

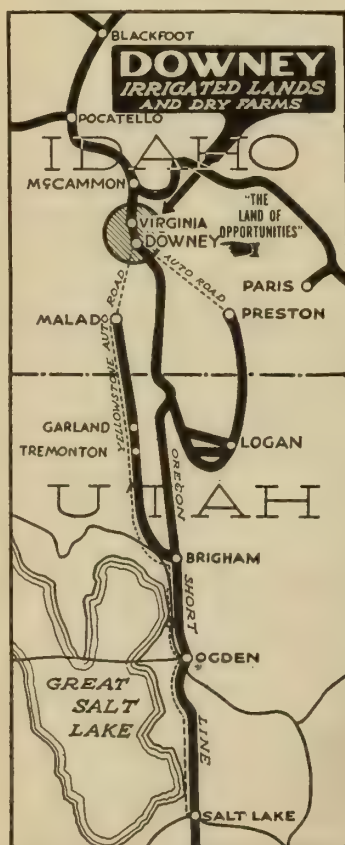
Soil

The soil is a rich sandy loam, which in its natural state is covered with a heavy growth of black sage. This type of soil has been proven to be equal of any in the world for fertility.

Markets

Stock, grain and produce are shipped to Utah, Montana and Pacific Coast points. The local demand is greater than the supply. There are no better markets any place in the country than those tributary to Downey.

Study this Map



Main Canal Line Near Downey

Irrigating Water

An abundance of irrigating water is furnished through the big canal from the fine modern reservoir on the Portneuf river. The main canal is 30 feet wide, 4½ feet deep and 26 miles long.

Culinary Water

The culinary water, found at a depth of 15 to 35 feet from the surface, is of a very superior quality and in great abundance.

Why You Should Buy Now

A sugar factory will soon be built near Downey. By getting in TODAY you will be buying at "ground floor" prices. The Downey and Marsh Valley country is growing rapidly. Prices will never be so low again.

Come in, write or telephone and arrange to see for yourself. Get our free illustrated Downey folder. It is yours for the asking.

This man knows

J. A. Fitts, who has successfully farmed near Downey for six years, says, "Any man who will work on his farm in this valley is bound to succeed. There is no better land, no better railroad, no better water, both for domestic use and for irrigating, in the country. The soil is rich and the climate almost ideal. Potatoes will bring over \$100 per acre and from 40 to 50 bushels of wheat to the acre is a common crop. Last year I raised 35 car loads of fine potatoes on 100 acres of virgin land, or about 250 bushels per acre. There is no better farming country anywhere in America than the irrigated land near Downey."

\$60 to \$100 An Acre

including a full water supply from the big Canal system, is the average price of the best irrigated farming lands. Most of the farms are in 40-acre units. In the main they are fully developed farms with alfalfa, grain and garden products now growing.

Terms

The first payment on a 40-acre farm is from \$200 up. The balance can be paid in 10 equal yearly payments. Interest at only 6 per cent on the unpaid balance. Dry farms \$35 to \$65 an acre.

Mail this Coupon TODAY

KIMBALL & RICHARDS
"Land Merchants"
58 Main street, Salt Lake City, Utah.
Please send illustrated Downey folder.
Name
Address
I am interested in buying
(number of acres).....
F

Kimball & Richards

"Land Merchants"

EXCLUSIVE AGENTS

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Salt Lake City, Utah

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 3

LEHI AND SALT LAKE CITY, UTAH

AUGUST 19, 1916



The Modern Harvest

You can be independent on your own Irrigated Farm at **Downey, Marsh Valley, Idaho**

"The Land of Opportunities"

Located on the main line of the Oregon Short Line, 95 miles north of Ogden and 40 miles south of Pocatello.

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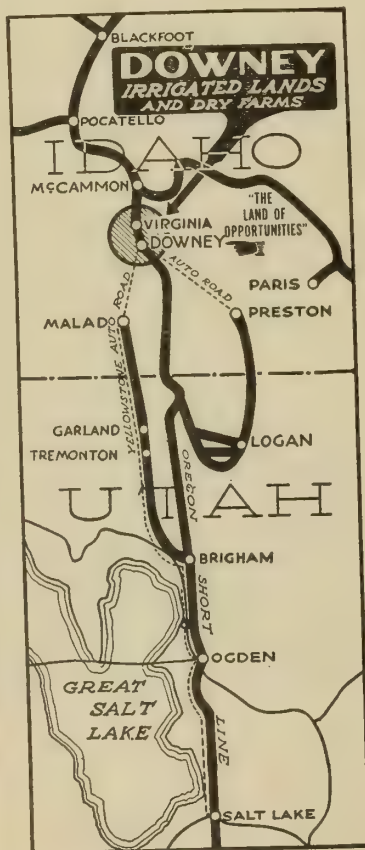
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An abundance of irrigating water is furnished through the big canal from the fine modern reservoir on the Portneuf river. The main canal is 30 feet wide, 4½ feet deep and 26 miles long.

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F	

Kimball & Richards

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EXCLUSIVE AGENTS

56 and 58 Main Street

Salt Lake City, Utah

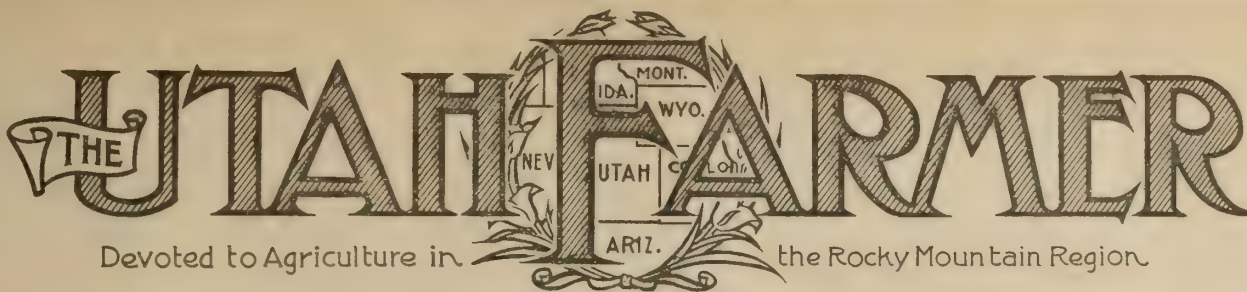
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1904.

PUBLISHED

EVERY

SATURDAY



ONE DOLLAR

A YEAR.

FOREIGN

SUBSCRIPTION

\$1.50.

COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

VOLUME XIII.

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No. 3

Improvement of The Potato In Utah

Penland Opdycke.

Today, Utah plants about 20,000 acres or about one forty-second of her irrigated area to potatoes, yet this is one of her most bounteously-yielding crops and one that is exceedingly profitable with good marketing facilities. In 1913, 3,600,000 bushels, valued at \$2,088,000.00, were produced, this giving an average of 180 bushels or \$104.00 per acre (average price, \$.58 per bushel). 1913 was probably a good year for potatoes, the general average for other years falling slightly below this yield. Most of the irrigated districts of Utah where the potato is especially adapted, have good transportation facilities, and, with the advent of co-operation in marketing, there is no sound reason why Utah should not become an important state in the production of the commoditable tuber.

The improvement most needed in the production of more and better tubers may be summarized as follows:

- (1) Uniform, intelligent irrigation.
- (2) More care in the preparation of the seed-bed and subsequent cultivation.
- (3) Selection for a uniform product.
- (4) Selection for an increase in the number of standard tubers per hill without disregarding vitality.
- (5) Breeding of disease resistant varieties and other desirable characters.

These factors may then be divided into cultural, selective and breeding improvement. The first four are more or less under the control of the individual grower while the latter are necessarily limited to the expert breeder.

Of all the wanton neglect—downright hard-headed lack of foresight and reason (in many cases pure perfidy)—it sure comes under the heading classified as No. 1. If there is one thing that will improve the potato industry, and related farming, more than improvement in our irrigation, it yet remains to be discovered. If there is anything that will turn a man to tears, it is to note the careless flooding,—the irregular, unfounded method of application of our precious "elixir of life" and the clamoring for more. I don't wish them harm, but I would sure like to see our "water hogs" given the same moisture treatment which they give the poor crops. Volumes could be written on irrigation as a factor in crop improvement but I fear those who need it most would not trouble themselves to read it, so one little tip only will be given:

If early irrigation is required, do it before planting the crop. Don't irrigate again until the buds are swell-

ing and opening, but, after irrigation has once commenced, maintain the soil in a fairly moist condition (not wet) up until a few weeks before harvesting. Use deep furrows and don't apply more at one time than the upper few feet of your soil can hold. It won't do any good to do so and will most likely carry away dollars and cents in the form of plant food. Just memorize the above and carry it into practice and you are well on the way to very successful potato growing in Utah.

The prospects of increasing the yield of potatoes on average Utah soils under irrigation are very promising. Many have succeeded in growing eight and nine hundred bushels per acre without any special effort. In fact the average potato yields of today as compared with possible yields are very low. Over in Scotland, one man grows 2,000 bushels per acre while yields of ten, twelve and even fifteen hundred bushels per acre are not regarded as exceptional in many parts of Scotland and Ireland. With our ability to control the moisture relation, it does not seem impossible for us to equal these yields. We can never expect such results, however, as long as we irrigate early and haphazardly after irrigation has once began, pay little attention to the preparation of the seed-bed, plowing and other tillage practices and utterly disregard the importance of seed selection. It is doubtful if such high yields would be profitable to secure but it is certain that the proper application of the labor now expended in growing the crop would give surprising results.

The three chief methods applicable to potato improvement in addition to cultural methods are field selection, seed selection, and hybridization. The former is the one most applicable to average farm conditions and is consequently the one which will receive the most attention in this paper.

Numerous methods have been devised for field selection and biologists are yet contending for the virtues of line breeding, narrow breeding and broad breeding, but they are all pretty well settled in confirming continuous selection for a practical method of potato improvement. The effect of vegetative selection is to restrain the expression of characters to a single individual set by suppressing the original diversity of the group. Nevertheless, the suppressed characters have a tendency to return to expression. "There is no warrant for believing that any method of selection can establish varieties on a stable basis so as to

prevent the return of diversity and render further selection unnecessary. Selection always appears to improve both narrow and line bred varieties, not because it raises them to new standards but because it weeds out those lines of descent which have failed to maintain the old standards." Vegetative selection is more effective and more easily perpetuated in potatoes than other crops because they are usually propagated by these means and cuttings are very easily made. That is, the new potato plant is simply a continuation of the parent plant—the growth of a piece of the old plant. We can compare a potato plant that is continually selected by vegetative means to a tree, as the plants, if all were maintained and none died, would probably make a very large tree. We all know that when a tree becomes old, the addition of new tissue diminishes and the plant loses in vigor. The same is true of the potato, so when one plant loses its vigor and begins to deteriorate, a new plant should be selected. Of course this is not absolutely known to be true with the potato but experience seems to indicate that it is. It was formerly believed that "narrow breeding" or "inbreeding" was likewise injurious and that new infusions of "new blood" were occasionally necessary in order to maintain the vigor but it seems, in the light of some recent discoveries, that the old investigators selected for desirable characters without the correlation of vigor. Even recently, Prof. King has secured the largest rate known (and preserved, even increased, the vitality) by close inbreeding. All are agreed, however, that this deterioration, if actually of occurrence under careful breeding, does not appear so readily in vegetative propagation. So that with this advantage and the making use of heterozygous (first generation) hybridization, it appears that improvement of the potato by breeding should not present any great difficulties except in the factor of time.

Selection of seed for place effect has been shown by experiment to be beneficial in warm climates, but in temperate regions it is best to use the seed that has become adapted to the particular locality in which it is to be grown. This does not mean that good results cannot be obtained by the importation of pedigreed or improved "strains," but they should not be imported from a warmer climate than the one in which they are to be grown unless the grower can content himself with low yields for several years, before they become acclimated.

Selection based on vegetative re-

production can easily be followed on every farm by adopting a system calling for four separate plats, one of them being the general field. From the above it is apparent that an ideal should be established and then rigorous selection practiced to attain and maintain that ideal. The farmer should formulate in his mind what a good tuber should be and what he desires and then select for that type.

What To Select For.

The biggest need of the potato market is an average sized potato (6 to 9 ounces) of uniform characteristics and size. Such a potato will command a higher price on any market as it appeals to the consumer and gives satisfaction. Characters desired in quality potatoes may be enumerated as follows:

- High starch content (mealiness).
- Large cortical and exterior medullary area.
- Flat oval shape.
- Russeted skin.
- Smoothness.
- Medium shallow eyes.
- Uniformity in size, shape, composition, texture and smoothness.
- Vigor.
- Disease resistance.

High tuber production per vine (but never at a sacrifice of the other characters).

These may seem a large number of characters to keep in mind but only those specimens where correlation of all is found should be selected. It will probably always be found that vigor and disease resistance will be found correlated with the other above mentioned characters, although Stuart has found that a russeted skin is not always associated with resistance to scab (*Pythophthorus infestans*).

Very little has been done with the potato in the way of segregating Mendellion characters, so little can be said pertaining to this angle of potato improvement. This is a matter for the expert, scienced breeder, however, and little concerns the practical farmer other than that he should take an interest in what is being done and influence and assist the establishment of this work. Some day every county of the state will have experimental stations where this work will be carried out and superior seed furnished the farmer. This certainly is one big means of bettering the agriculture of the state and should have the careful consideration of our farmers as well as other citizens of the state.

We are agreed, then, that every farmer in the state can improve his potato crop by cultural and veget-

(Continued on page 14)



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(STANDARDIZED)

AN

INSECTIDE & DISINFECTANT
FOR
CATTLE, SHEEP, HOGS, POUL-
TRY, AND

To be used for disinfecting barns,
chicken coops, corrals, hog pens,
out-houses, etc.

One Gallon Calko Dip Makes
From 50 to 100 gallons of disinfect-
ant.

45c Quart
75c Half-gal.
\$1.25 Gal.

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Calko Hog Pow- ders

IS A HOG CONDITIONER AND
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Don't feed worms—save your hogs
25 lb. sack (delivered
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Samples Free
ATTACHED INSTANTANEOUSLY
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LEG BANDS for Poultry, Pigeons, Turkeys
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160 acres, all irrigated, fenced,
log buildings, has abundance of
range and timber. Price only
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FEDERAL LAND COMPANY

416 24th Street
Ogden, Utah.

Associate yourself
with a growing
bank.

Records of deposits of
this institution.

1912 \$3,200,000
1913 3,800,000
1914 4,500,000
1915 5,300,000
July, 1916 6,500,000

AN INCREASE OF
\$3,300,00, MORE THAN
DOUBLED IN FOUR
YEARS.

Walker Brothers
Bankers
SALT LAKE CITY



DAIRYING

SUMMER FEEDING OF

DAIRY COWS

One of the most common mistakes in the feeding of dairy cows on the farm is that the good cows are not given a sufficient quantity of feed above that required for their physical maintenance to obtain the maximum quantity of milk they are capable of producing. Successful feeding of dairy cows involves the providing of an abundant supply of palatable, nutritious feed at a minimum cost and feeding in such a way as to receive the largest milk production from the feed consumed. Feeding for profit is defined as liberal feeding, or feeding to the full capacity of the cow.

From the standpoint of economical milk production, a dairy cow generally should not be fed more than she will consume without gaining in weight. There are times, however, according to the bulletin, when it is desirable to make exceptions to this rule. Practically all heavy milk producers lose weight in the early part of their lactation period; that is, they produce milk at the expense of their body flesh. When such cows approach the end of their milking period they normally regain the flesh they have lost, and the farmer can well afford to feed them liberally, with the assurance that he will be repaid in the form of milk when the cows again freshen.

Pasture is the natural feed for cows, and for average conditions, with ample pasture of good grasses or legumes in good, succulent condition, good production can be secured.

The cost of land is a factor in the economy of using pasture, however. If pastures are depended upon entirely for from four to six months of the year, and production is kept up to a profitable standard anywhere from 1 to 4 acres or more must be provided for each cow, says the bulletin. This is assuming that a permanent pasture is of good, clean turf, with few or no waste places, or that a temporary pasture has a good stand of grass or legumes throughout. Land that will provide such pasture frequently is high priced. The following tables show the cost of pasturing a cow on land ranging from \$25 to \$200 an acre.

Interest on cost of pasture per cow for the season; interest at 6 per cent on the value of the land, allowing from 1 to 4 acres per cow.

Acres per cow.	\$25	\$50	\$100	\$150	\$200
1	\$1.50	\$3.00	\$6.00	\$9.00	\$12.00
1½	2.25	4.50	9.00	13.50	18.00
2	3.00	6.00	12.00	18.00	24.00
2½	3.75	7.50	15.00	22.50	30.00
3	4.50	9.00	18.00	27.00	36.00
3½	5.25	10.50	21.00	31.50	42.00
4	6.00	12.00	24.00	36.00	48.00

Cost of pasture per cow per day on basis of preceding table with a pasture season of 150 days.

Acres per cow.	\$25	\$50	\$100	\$150	\$200
1	1	2	4	6	8
1½	1½	3	6	9	12
2	2	4	8	12	16
2½	2½	5	10	15	20
3	3	6	12	18	24
3½	3½	7	14	21	28
4	4	8	16	24	32

Where the value of land is so high that the cost of pasturing is excessive, or where the land may be more pro-

fitably used for growing crops, other methods of summer feeding are more profitable. It is stated that in some sections for average production a cow can be fed on dry feed for 20 cents a day, and when the cost of pasturing exceeds that amount some other method of feeding should be considered.

Grain should be fed to heavy-producing cows under all pasture conditions, says the bulletin. The following table is furnished as a guide to feeding grain with an abundant pasture. Variations should be made to suit different conditions and individual cows.

Jersey cow.		Holstein-Friesian or Ayshire cow.	
Daily milk production (pounds).	Pounds of Grain.	Daily milk production (pounds).	Pounds of Grain.
20	3	25	3
25	4	30	5
30	6	35	7
35	8	40	9
40	10	50	10

Grain fed to cows on pasture need not contain the same percentage of protein as for winter feeding. Pasture being an approximately balanced ration, the grain ration should have about the same proportion of protein to other nutrients. The following mixtures are suggested for supplementing pasture without other roughage:

Mixture No. 1:	Ground oats	100 pounds
	Wheat bran	100 pounds
	Corn meal	50 pounds
	Per cent digestible protein,	10.3.
Mixture No. 2:	Wheat bran	100 pounds
	Corn meal	100 pounds
	Cottonseed meal	25 pounds
	Per cent digestible protein,	12.7.
Mixture No. 3:	Corn and cob meal	250 pounds
	Cottonseed meal	100 pounds
	Per cent digestible protein,	15.5.
Mixture No. 4:	Wheat bran	100 pounds
	Gluten feed	50 pounds
	Corn meal	50 pounds
	Per cent digestible protein,	13.6.

To carry cows over a period of short pasture without a falling off in milk, soiling crops are growing in favor. For this purpose second-growth red clover, alfalfa, oats, or peas, are excellent. Corn is also available in August and September. What may be a disadvantage in the use of soiling crops is the extra labor required to cut and haul these crops from day to day, especially if field work is pressing.

On high-priced land, where the problem is to produce a sufficient quantity of roughage or in the cost of pasturing is excessive, the summer silo may be used to advantage. An acre of corn in the form of silage will provide succulent roughage for several cows for a season. During periods of drought, when both pastures and soiling crops fail, a silo filled with well-matured silage grown the previous year is most valuable.

In planning a summer silo, it should be kept in mind that its diameter should be in relation to the number of cows fed daily. As a general rule, under summer conditions, a cow will consume about 20 pounds of silage. Silage enough must be removed daily to prevent excessive surface fermentation. On this basis, a summer silo for 20 cows should be 8 feet in diameter; for 30 cows, 10 feet; and for 40 cows,



THE HOG MOTOR is both a grinder and feeder. With it your hogs will grind their own grain, saving you money and labor. This machine will care for 30 hogs on full feed at a saving of 25 per cent of the grain, and a pig of 40 lbs. can operate the grinder. Grinds all kinds of grain; coarse or fine, separate or mixed. No waste—grain always dry, clean, fresh. We will keep the machine in repair one year free, and refund money if not satisfied at the end of sixty days. Send for Booklet. — Agents Wanted.

HOG MOTOR CO.

736 Andrus Bldg.

Minneapolis

If you want money,
drop us a line.

We loan on first mortgages
on Utah farms or Salt Lake
City real estate at reasonable
rates.

Prompt action and fair treat-
ment if you do business with us.

Palmer Bond &
Mortgage Co.

WALKER BANK BUILDING
SALT LAKE CITY

THICK, SWOLLEN GLANDS

that make a horse Wheeze,
Roar, have Thick Wind
or Choke-down, can be
reduced with

ABSORBINE

also other Bunches or Swellings. No blister
no hair gone, and horse kept at work. Eco-
nomical—only a few drops required at an ap-
plication. \$2 per bottle delivered. Book 3 M free
ABSORBINE, JR., the antiseptic liniment for
mankind, reduces Cysts, Wens, Painful
Swollen Veins and Ulcers. \$1 and \$2 a bottle at
dealers or delivered. Book "Evidence" free
W. F. YOUNG, P.D.F., 142 Temple St., Springfield, Mass.



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Quick Service

Get our prices before you send
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Manufacturers of Folding Boxes.
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12 feet. As 8 feet is about the min-
imum diameter of a silo for best re-
sults, a summer silo is most applica-
ble in herds of 20 or more cows. Send for
Bulletin No. 743 to Washington D. C.

Systematize Your Selling Efforts

By C. M. Adams.

Adopt a Name or Brand for Your Products, Then Advertise Them.

Keen competition has caused the selling side of business organization to be emphasized as much or more than the production side; and this tendency has extended to the farming of a large crop alone, will find himself in a much worse condition than the man who gives apart of his time and energy to selling, although his crop is not so large.

Advertising is one of the selling aids which farmers have not used in their business. It is not because it does not pay, for advertising can be made as efficient when applied to farming as to any other kind of business; and the hesitancy to take up with the plan seems to be caused rather by the reason that farmers have not seen the application of the principle of advertising, or have not understood how to go about it.

The problem which confronts most farmers and which can be solved by advertising is something like this: He sells his produce either to the consumer direct, or to a dealer who re-sells to the consumer. Now, what the farmer wants accomplished is: That the consumer shall either wait to buy his goods from him, or shall ask the dealer for his particular brand of goods.

This is the ideal condition in which the farmer can hope to sell the most goods.

Advertising can accomplish this if properly used. The first step which must be taken in bringing about this desired result is to have the goods marked or named by some given mark or sign, which shall make them recognizable by the consumer when he purchases them. If he goes into a store and wants to buy farmer B's butter, he wants to be sure that he is getting farmer B's butter and not farmer C's, which he mistrusts as not being of the best quality. If he knows that farmer B's butter is called "Cloverleaf," and can see it impressed in the butter itself and printed on the wrapper, he is sure that he is getting what he asks for.

So, then, it is of the utmost importance to choose some mark or name which shall serve as an identification tag for the farmer's goods which are to be advertised. This mark or name, or both, should be attractive, unique and appropriate. It should be easily pronounced, readily remembered, and not too fantastic. If the name of the farm is a good one and fills these requirements, it can be used with great convenience. But if it does not satisfy the requirements laid down in the foregoing, it should not be used, and some other and better name should be employed.

If possible, the name should be represented by a picture or design. This will serve as an additional identification mark and will make it much easier for the consumers to recognize what they want. If desired, the name marks can be registered, or protected in some such way. But this is not necessary in most cases, as a suit can

be filed against anyone infringing on the strength of unfair competition.

After the name has been chosen the next problem arises is the question, how can this mark or name be applied to the goods themselves so that they can be recognized easily?

This will of course vary with the nature or shape of the goods. If one is selling butter the name can be impressed in the butter itself and printed on the wrapper. If it is honey the name can be stenciled on the wooden frame. If it is radishes and onions the name can be printed on a band of paper which can be pasted about the bunch of vegetables. If it is eggs the name can be stenciled on the shell itself. If it is small vegetables, such as peas or beans, they can be put in a printed paper bag. Small fruit, like strawberries, can be marked by having the boxes stenciled. Tags can be pasted directly on large fruit, like watermelons. Each individual case must be handled in the way best suited to it. But the main thing should not be overlooked. That is, to have the name or brand-mark displayed in a prominent and attractive position.

With the name devised and put on the goods, the next problem is to get the name before the prospective consumers in a way that will make them ask for these goods. This problem will be affected by many local conditions, namely: In what sized town or city the goods are to be sold; whether they are to be sold direct to consumers or through dealers; whether on a public market or from a wagon, and other minor considerations.

Each of these factors will affect the medium to be used in advertising, the way this medium is to be handled, and the nature of the copy to be run. For instance, the advertising campaign will certainly have to be different when one wishes to sell goods in a small section of a large city, through dealers, than if one wished to sell to a small town direct from his own wagon.

The different mediums which can be used are newspapers, billboards, street-car cards, handbills, personal letters and window cards (for dealers). The individual case will have to govern the particular mediums used.

In small towns where newspaper space is cheap it can be used to good advantage. But in a big city this can be replaced more cheaply by street-car cards (if they can be put on the lines covering the section to be worked).

If possible it is best to have the ads written by a professional ad writer. But if this cannot be done, the best talent available should be secured. Care should be used in the choice of points to be emphasized, such as the brand name, the quality of the goods and other like points.

The campaign should be started some few weeks or days before the goods are to be ready for sale. Sufficient time should be allowed to let the public become interested in the goods before they appear. For instance, if cherries will be sold the first of June, the advertising should start about the 10th or 15th of May. It should start

Money to Loan On Farms

LIBERAL TERMS

If you need money for additional improvements to buy livestock or any other purpose let us help you.

Because of our long experience in the land business, we are prepared to give you the best service and portection.

Ask any bank in Salt Lake City as to our reliability.

Come and see us or write.

Kimball & Richards

"Land Merchants"

56 and 58 Main Street
Salt Lake City, Utah.

Sheep Dipping Carsolium

HAS BEEN USED UNDER GOVERNMENT SANCTION FOR MANY YEARS.

STREVELL-PATERSON
HARDWARE CO.

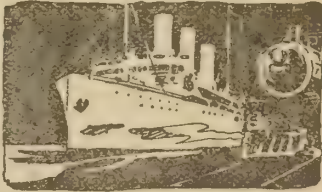
Local Distributors

Salt Lake City, Utah.

off light with little space, and then work up to a climax just at the time when the goods appear.

As can be inferred from the foregoing, if a farmer has all his goods named by the same general brand name he can profit very much by having several lines of goods which he can sell the year round. In this way he can keep his name before the public all the time and thereby gain in publicity and sales.

A warning should be given to the too optimistic and expectant. A single insertion of a poorly written ad in a country paper will not accomplish any very tangible results. Such an attempt should not be called advertising, and because it fails the whole system should not be tabooed. Intelligent advertising, if properly used and persisted in, will accomplish results in the form of materially increased




To San Diego and San Francisco

VIA LOS ANGELES and rail or steamer

\$40.00 TO SAN DIEGO or SAN FRANCISCO and return

ON SALE DAILY beginning MAY 1st.

Liberal Limits and Stopovers
BEAUTIFUL SAN DIEGO EXPOSITION
OPEN ALL YEAR
J. H. Manderfield A. G. P. A.
10 E. 3rd South St.
Salt Lake City, Utah.

business, and what is more pertinent to the question at hand, it will do so for the farmer. Try it.

When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.



*** Combined with the ***
Deseret Farmer and Rocky Mountain Farming
Established - - - - - 1904

Entered as second-class matter in the postoffice at
Lehi, Utah.

Published every Saturday by the
DESERET FARMER PUBLISHING CO.
LEHI, UTAH.

Subscription price - - - \$1.00 year
Canadian and Foreign postage 50 cents a year extra.

OFFICES

All mail should be addressed to the Utah Farmer
Lehi, Utah, Kirkham Building.
Our office at Salt Lake City, Utah,
is at 417 McIntyre Building.

Members of the



New York Office 5th Ave. Bldg.
S. E. LEITH, Mgr.
Chicago Office Steger Bldg.
TOM D. COSTELLO, Mgr.
Minneapolis, Minn. Globe Bldg.
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St. Louis Globe-Dem. Bldg.
C. A. COUR, Mgr.

Change in Address—When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the address cannot be changed. This is a matter of importance to you and to us.

OFFICIAL ORGAN

Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers Association.

OUR GUARANTEE

We guarantee every subscriber against loss thru dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent upon application.

What has become of the old-fashioned boy who would rather stay home and work than go to school?

Utah has nearly doubled the number of automobiles we had last year. The greater part of these are being purchased by farmers.

Some thought and attention should now be given to planning the fall work, for to plan and then effectively carry it out, is making progress much faster than any other way.

TOURING FARMERS.

A number of educational trips will be made by many farmers in the very near future. Carbon and Emery Counties will have an excursion to Sevier County, and they expect about thirty automobiles to make the trip. Utah County farmers will go to Cache Valley, forty to fifty automobiles will make this tour. Weber County will visit Salt Lake and Utah Counties, the estimate has not been made as to the number who will make this trip. Other excursions are being planned.

The automobile is a big factor in making these excursions possible. There are plenty of them in the country, and those who own them should invite their neighbors to go with them on these tours. These trips should bring the most beneficial and educational results. Farmers will get new ideas by meeting and conversing with the agriculturalists of other sections, and the things they learn can be taken home and made profitable

in their own farming.

No farmer is so busy that he cannot afford to take a day or two off and go with the excursion from his district, because it will be time well spent.

A REAL WIDE-AWAKE BANKER.

Thos. F. Chamberlain, cashier of the First National Bank at Brighton, Ill., accompanied by A. P. Schneeberg, a prominent dairyman of that place, have just purchased from C. C. Faville 132 head of Holsteins. Most of these are yearlings and two year old heifers which Mr. Chamberlain is distributing among the boys and girls on the farms in that community. The plan is to allow each boy and girl who is a member of the First National Calf Club, to take one of these heifers, giving their personal note to the bank running ten months and signed by the father as security. At an early date in January a public sale will be called and all of these heifers, which by that time will have calves by their sides, will be sold through the ring to the highest bidder.

The bank with which Mr. Chamberlain is connected believes in community service and that by the introduction of these heifers the quality of the dairy cows there will be raised. The boys and girls will not only be taught the use of credit, but each will strive to outdo the other in caring for their heifers. These heifers are being sold to the children at actual cost and are the biggest bunch of young stuff ever driven through the streets of Lake Mills.

If more bankers would take interest in farmers as Mr. Chamberlain is doing, they would not only place their institution more prominently before the people, but would be actual benefactors to their respective communities.

This is a plan that might be carried out in many communities, and Mr. Faville will be a benefactor if he should be able to get other communities interested.

COMMISSIONER OF AGRICULTURE.

At a recent meeting of the Weber County Farm Bureau they discussed the question of having a state officer to be known as the Commissioner of Agriculture. Mr. McKay, President of the Bureau says that inasmuch as the state is provided with a Horticultural Commissioner a Dairy Commissioner and other state officers whose duties pertain to a special line of agricultural work, that we should have an Agricultural Commissioner whose duty it would be to look after the general interests of the farmers of the state. The farming interests of Utah are of such a wide scope and character that to leave them to drift along will result in a serious handicap, and retard agricultural development.

The question might be asked: Are not the agricultural interests amply taken care of by the Agricultural College? The function of the College is purely educational. The college proper with all its schools, the Experiment Station, the Extension Department, each with the special line of work centers around the problem of educating the people of the state along agricultural lines. The college has done its work well, and in every nook and corner of the state can be seen the results of the agricultural work conducted by the Agricultural College. Then why a Commissioner of Agriculture? To give to agricultural interests an organization wherein all other phases may become cemented together into a practical working

system, avoiding duplication and providing for greater efficiency. To promote the interests of agriculture, dairying, horticulture, the manufacture of agricultural products, and the domestic arts.

The field of work would be that of control, inspection and organization and not attempt in any way to conduct educational or experimental work.

The creating of the office of Commissioner of Agriculture would or should abolish a number of boards now existing, whose work would properly be conducted by the Commissioner of Agriculture and his assistants.

In states where the office has been created many departments and boards have been eliminated and much expense saved to the state.

It would be well for the people of the state to look into this matter most thoroughly, so as to secure legislation during the coming sessions of the legislature that will enhance the Agricultural interests of the state.

COUNTY FAIRS.

The men and women who are working for the promotion and success of the county fairs are deserving of our good will and support. Very few, if any, of them receive any compensation. Their reward for the work they do is in the good they accomplish.

County fairs will be held this year as follows: Sevier County, September 14 to 16; Millard County, September 14 to 16th; Summit County, September 19th to 22nd; Duchesne County, September 9th to 22nd; San Pete County 21st to 23rd; Cache County 25th to 28th, and Dixie, 7th to 8th.

These county fairs should be educational in their character—a great object lesson. They should teach by contrast what many of the counties are able to do—they should create friendly competition. Every community should feel a pride in the local fair, and co-operate with the officers in making them a success.

The farmer should take advantage of these local fairs and advertise his farm products—should let his neighbor know the kind of seed corn, seed wheat, fine cattle, horses, or sheep he is producing. In the communities where these local fairs are held year after year one usually finds better livestock, better farms, and better farmers.

These county fairs should not be made amusement enterprises or used for side-show features. The better people will not support or patronize this kind of a fair. These county fairs should be for the exhibition of the best one county produces, and to bring the people together in friendly competition which will stimulate mental and social life.

These county fairs should be a help to the State Fair. Something should be done to increase the agricultural exhibits at our State Fair. One of the officers the other day told us, "that they did not want agricultural exhibits because they did not have a place to put them." If adequate space is not available for taking care of these exhibits, immediate steps should be taken to provide it. Our State Fair should represent the agricultural resources of the state.

Visit the county fairs, you are but a short distance from anyone of them, when you stop to consider what a short time it takes to go in an automobile—possibly returning the same evening to your home.



Announcing The Reo Models and Prices

Two Important Price Reductions
Two Interesting New Models



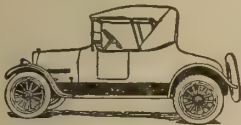
The New Four-Cylinder, 3-passenger Reo Roadster, \$875



The New Reo the Fifth, "The Incomparable Four," \$875



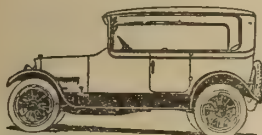
The New Four-Cylinder Reo Enclosed Car, \$1025



The New 4-passenger Reo Six Roadster, \$1150



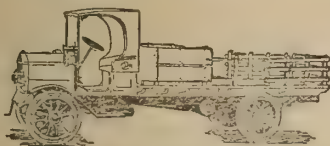
The New 7-passenger Reo Six Touring Car, \$1150



The New Reo Six 7-passenger Sedan, \$1750



1500-pound Reo "Speed Wagon," \$1000



2-ton Reo Truck (Chassis only, with Driver's Seat and Cab), \$1650

(All Prices are f. o. b. Lansing, Michigan)

YOU WANT TO KNOW—everybody always wants to know—what models Reo will make the coming year, and the price of each.

OF COURSE THERE ARE NO NEW MODELS—new chassis models we mean. You do not look for, do not expect, do not want new chassis models from Reo.

THAT ISN'T THE REO WAY. Refinements—of course. Detail improvements—wherever and whenever we can find a place or a way to make them.

NOTHING RADICALLY NEW is ever offered to Reo buyers. For it isn't new when it gets to you—it has been thoroughly tried and conclusively proven before we let it get into a Reo car.

NEW BODY TYPES—YES—and some that put Reo in the highest class of cars in looks as well as in performance and longevity. We'll treat of each in turn.

REO THE FIFTH COMES FIRST, of course. First not only among Reos, but among motor cars.

FOR THIS IS THE GREATEST automobile ever built, we verily believe.

THIS IS THE SEVENTH SEASON that Reo the Fifth has been standard in practically its present form.

NO: THE PRICE WILL NOT BE CHANGED this season. We will not increase—we cannot lower it.

ACTUAL COST OF MAKING is now more (\$50 more) than when the present price, \$875, was set a year ago. And we had made this model so long; had so refined and perfected manufacturing processes; had reached such a high state of efficiency in production; and cut dealers' discounts so low that we had, then, reached rock bottom.

IT WAS AN ACHIEVEMENT of the first magnitude to produce such a car and sell it at such a price—\$875.

TODAY YOU SEE OTHERS increasing prices all along the line. They must do so. They have no choice.

ORDINARY BUSINESS RULES dictate that we also "tilt" the price of Reo the Fifth \$50 at least.

BUT REO PRIDE PROMPTS that we absorb the extra cost, as we have for months past, and keep the price where it is until conditions will, happily, return to normal.

THE FOUR-CYLINDER ROADSTER—same wonderful chassis, same price, is the smartest thing on wheels—the most popular car in the world among physicians, and all professional and business men. Also \$875.

TO SUPPLY A GROWING DEMAND for an enclosed body on Reo the Fifth chassis, we have planned to build a limited number. The quality will be Reo—which is to say, excellent. The top is rigidly supported at front and rear. Removable glass panels convert it into a veritable limousine for winter, and these discarded and with jiffy curtains (which are also furnished) it is an ideal summer touring car. The price is \$1025

THE NEW REO SIX will continue in its present popular forms—the 7-passenger touring car and the classy 4-passenger roadster.

AND WE WILL MAKE a limited number with Sedan bodies to supply an insistent demand for this type of body on this splendid chassis.

THE PRICE IS REDUCED \$100 on the 7-passenger and roadster models. Now \$1150!

NOW YOU WONDER, and naturally, how we can reduce the price of the Reo Six models and not the Four—especially after what we have just told you about the increased cost of production.

SEEMS ILLOGICAL at first blush—doesn't it? But it isn't. For the truth is never illogical. And the truth is that despite the present higher prices of materials and labor still it costs us less to make this six-cylinder model than it did a year ago.

BY THE WAY—there's the greatest possible example of the workings of the Reo plan and its beneficence to buyers. Listen! REO THE FIFTH SOLD FOR \$1250 in 1912. Its price was reduced by successive stages from year to year as follows: \$1175, \$1050, and now is \$875 f. o. b. Lansing.

SAME CAR?—No—an infinitely better car—for each year we have incorporated refinements and added equipment as the art has developed.

AND WE TOLD YOU EACH YEAR the reason for the reduction—that we had absorbed a portion of the initial—experimental, tool, jig, die and special equipment—cost, and were giving you the benefit.

THIS POPULAR REO SIX is now in its third season. It has passed the same stages through which its great four-cylinder namesake went—initial costs have been absorbed, charged off. And in accordance with that unswerving Reo policy we give the buyer the benefit and set the price at \$1150 f. o. b. Lansing.

WE WILL MAKE A LOT MORE of those 4-passenger Six Roadsters the coming season. We underestimated the appeal and the demand for this model. It proved one of the most popular Reos ever built.

THE SIX SEDAN speaks for itself, though, truth to tell, an illustration does it scant justice.

YOU MUST SEE IT where you can study its artistic lines and faultless finish to fully appreciate this latest Reo which we price at \$1750.

NOW A WORD ABOUT THE TRUCKS since 90 per cent of all Reo automobile distributors also handle Reo motor trucks.

PRICE OF THE 1500-POUND REO "Speed Wagon" has been reduced to \$1000.

SAME REASON—SAME POLICY—reduced cost of manufacture despite higher present cost of materials—as enunciated in speaking of the Reo Six.

AND THAT TWO-TON REO. What shall we say? What need we say? We submit, it is the greatest 2-ton motor truck in existence. Has been standard for longer. Has given greater proof of its sturdiness and efficiency and low cost of upkeep.

IF WE ARE TO JUDGE by that over-demand, we may well assume that we could sell all that we could make were the price \$2500, instead of \$1650.

AND FINALLY A WORD about the big general plan—a brief reiteration of the Reo policy.

WE STILL ADHERE to our determination never to make more Reo cars or trucks than we can make and make every one good.

TEMPTATION IS GREAT of course. Dealers protesting, buyers begging for more Reos. But we know—we know—on what solid foundation this Reo success was built; and we'll jealously guard that policy to the last.

RATHER THAN INCREASE the quantity we shall strive always to improve the quality so that, as the art advances and cars generally improve, still Reo will continue to be known as—
"The Gold Standard of Values."

REO MOTOR CAR COMPANY
REO MOTOR TRUCK COMPANY
Factories: Lansing, Michigan



The Macadam Road and Its Construction

Manen Allen.

The macadam road is very extensively used and until the advent of the automobile, was waterbound and without surface treatment, but automobile traffic has done such damage to this type that it has become necessary in many cases to give the old macadam road a surface treatment of bitumen, and when doing new construction, to use the bitumen as a binder. Where there is little automobile traffic, it is still wise to use the waterbound macadam road, but those cases are daily becoming rarer. I will first take up the construction of the waterbound macadam road. Previous to the construction of this type of road, there should be a careful survey made and proper plans and specifications prepared. Whereas, in the case of the earth, sand-clay, and gravel road, because these types are temporary, it is not essential immediately to straighten out the crooks and bends or to reduce the grades to ultimate maximum, in the case of the macadam road it is different. With the hard surfacing of a road, you perpetuate its alignment and grades. The plans and specifications should provide for thorough drainage, both surface and underground, and for consolidation of the sub-grade. Without thorough drainage, the life of the surface is very materially shortened, and the cost of maintenance increased; with a well consolidated sub-grade, the thickness of the surfacing may be reduced below what would otherwise be necessary. As the waterbound road is not suitable for heavy traffic, there would seem to be no need to build it wider than a single-track road—say, nine feet. When the traffic is sufficient to require a double-track road, a higher type should be used.

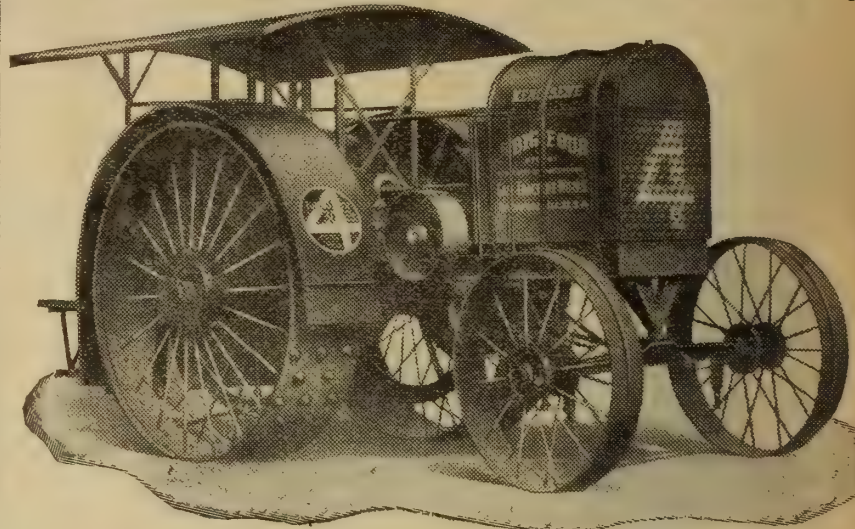
The waterbound macadam is constructed in two courses, a bottom course of four inches when consolidated, and a top course of three inches. The bottom course should be of broken stone from 2½ to 3½ inches in size. This stone should be spread in a uniform layer about six inches in depth, before rolling, and first rolled lightly with a roller of approximately ten tons weight. Filler should then be applied to the road, swept in, and the course rerolled until solid, more filler being applied during rolling until all voids are filled. The course should not be sprinkled until no more filler can be got in dry. When this has been done, the road should be heavily sprinkled and rolled and more filler applied until no more filler can be gotten in in this way. No surplus filler should be left on top of the bottom course. The filler should consist of fine stone, gravel, or sand, and should not have more than 15 per cent of clay or loam. The top course is next put on, and should be of broken stone from 1 inch to 2¼ inches in size. The top course should be built as described above for the bottom course, except that the filler should be of stone screenings exclusively. No loam or clay should be used to assist in the binding of the top course, as its use will be a detriment to the wearing qualities of the top course. The filling of both

courses, as I have specified, is very essential; if they are not thoroughly filled during construction, they will be filled later on when traffic comes upon the road, with material working up from underneath, which will break the bond of the courses, and ultimately cause disintegration.

When traffic is too heavy for the plain waterbound road, it may be constructed wider and thicker as a waterbound road, and then given a surface treatment of bitumen. The width and thickness will depend upon the weight and character of the traffic to come upon the road. The method of construction will be the same as I have already outlined for a waterbound road, up to the time of completion as a waterbound road. The next step is to sweep the top course thoroughly to remove all fine material from the surface, leaving the stones exposed. Heavy bituminous material is then applied to the surface hot, under pressure, at the rate of one-half gallon to each square yard, and covered uniformly with dustless stone screenings. It is not necessary to roll the road after this application, as traffic will do the rest. It may be that after traffic has used the road for a time it will become a little sticky. More screenings or stone dust should then be applied. Screening for the second application need not be dustless.

The next higher type of road, and the type that is being quite extensively used, is the bituminous macadam. If greater care is taken in the construction of this type, it will be found to stand up well under the traffic that today is passing over our rural highways. The bituminous macadam is built in two courses, and the construction of the bottom course is identical with that of the waterbound macadam. The top course should be three inches in thickness when consolidated, and of broken stone from 1¼ to 2¼ inches in size. The stone should be spread over the bottom course to give a uniform thickness before rolling of 4½ inches. This should be rolled sufficiently to well consolidate and lock the stone, but not so much as to break the stone or reduce the voids so that bituminous material when applied may not enter freely. Heavy bituminous material is then evenly applied at the rate of one and one-half gallons to each square yard and broken stone, ranging from one-half to one and a quarter inches in size, evenly spread to a thickness sufficient to fill the top course voids. The road is then rolled with a self-propelled road roller weighing not less than ten tons, until the course is thoroughly consolidated, and true to crown and grade. All loose particles of stone are then swept off the road, a second application of hot bitumen evenly given at the rate of one-half gallon to each square yard, and dustless stone screenings applied to a depth of one-half inch, after which the road may be thrown open to traffic. The bitumen should be as heavy as it is possible to apply, and obtain a thorough penetration. Bituminous macadam road failures, if the foundation is all right, are usually due to the use of too light a bitumen,

The Big Four "30" Tractor



Light Weight—Four Cylinders—Three Speeds

THE Big Four "30" is used for plowing, harrowing, seeding, harvesting, hauling and road grading. It provides an ideal power for threshing and all kinds of belt work. The Big Four "30" is so designed that it carries a large proportion of its weight directly over the rear axle.

Hyatt Heavy Duty Roller Bearings are provided for every bearing in the transmission.

We will be pleased to send full information on the Big Four "30" to anyone interested.

MILLER-CAHOON COMPANY

Murray, Utah

Idaho Falls, Idaho



Cement Pipe Molds

FOR MAKING IRRIGATION DRAIN and SEWER PIPE

K. T. Pipe Molds are the outgrowth of many years of experience in the successful manufacture of cement pipe—the one perfect water distributor—Efficient, Economical, Everlasting, and not affected by either heat or freezing.

These molds make it possible for you to obtain cement pipe economically—no matter where you may be located.

If you are interested in the subject of either Irrigation, Drain or Sewer Pipe, write for our special Cement Pipe literature—it will save you money.

KELLAR-THOMASON COMPANY

1230 East 28th Street., Los Angeles, Cal.

"Originators of the Valve System of Irrigation."

uneven application, or insufficient penetration. As an example of what may be expected if proper precautions are taken, I would state that during the years of 1909 and 1910 several hundred miles of bituminous macadam was built in the State of New York. Great care was taken to obtain bitumen of the proper consistency, and in construction, to get a good and uniform penetration. With but few exceptions, these roads are in first-class condition today, and the cost of necessary maintenance has been almost negligible. While great care should be taken to secure good work in the building of all types, this injunction is more vitally necessary when constructing the higher types. I shall not discuss any of the road types in which either patented processes or patented materials are used. Some of these give very good results, but I know of no case where as good results could not have been secured at less cost.

Do not wait until you have used the last Rutter Wrapper before ordering more, because it takes time to print them.

POULTRY

HINTS TO POULTRY RAISERS

Harry M. Lamon.

Selection of a Breed.

Be sure that the male at the head of the flock is purebred.

The Mediterranean or egg breeds are: Leghorns, Minorcas, Spanish, Blue Andalusians, and Anconas.

The American or general-purpose breeds are: Plymouth Rocks, Wyandottes, Javas, Dominiques, Rhode Island Reds, and Buckeyes.

The Asiatic or meat breeds are: Brahmas, Cochins, and Langshans.

The English breeds are: Dorkings, Orpingtons, and Redcaps.

For farm use the American breeds are probably the best.

Purebred poultry means uniformity of products.

Uniformity of products means profits, if products are properly marketed.

Given the same care and feed, purebred fowls will make a greater profit than mongrels.

Subscribe for a good poultry paper.

Every poultry keeper should have a copy of the American Standard of Perfection.

Artificial and Natural Incubation and Brooding.

Have everything ready beforehand and start your hatching operations early in the year.

A well-ventilated cellar is the best place to operate the incubator.

The machine should be operated according to the manufacturer's directions.

See that the incubator is running steadily at the desired temperature before filling it with eggs. Do not add eggs to a machine during incubation.

Turn the eggs twice daily after the second and through the eighteenth day. Cool the eggs once daily, according to the weather, from the seventh through the eighteenth day.

Turn the eggs before caring for the lamp.

Attend to the machine carefully at regular hours.

Keep the lamp and wick clean.

Test the eggs on the seventh and fourteenth days.

Do not open the machine after the eighteenth day until the chickens are hatched.

Eggs saved for hatching purposes should not be subjected to high or low temperatures.

In cold weather place from 10 to 13 eggs under the hen; in warm weather from 13 to 15.

Always test the hen on china or nest eggs before setting.

Given proper care and attention, the hen is the most valuable incubator for the farmer.

Use insect powder freely to exterminate lice when necessary.

February, March, and April are the best months for hatching.

If several hens are set in one room, it is desirable to confine them in good nests.

Straw and hay make good nesting material.

Broody hens should be moved to the permanent sitting nest at night.

Whole corn is a good feed for sitting hens. Water, grit, an dust baths should also be provided.

All eggs should be tested by the

seventh day, which often makes it possible to reset some of the hens.

Toe-march the chicks as soon as they are hatched. This enables one to tell their ages later.

Powder the chicks occasionally during the first eight weeks.

Start the brooder a day or two before putting in the chicks to see that the heating apparatus is working properly.

Brooder lamps should be cleaned every day.

A record should be kept of each hatch, showing the date set, number and kind of eggs, number tested out, and the chickens hatched.

Chicks should not receive feed until they are 36 hours old.

In cold weather 10 to 13 chicks are sufficient for one hen, while in warmer weather 15 to 20 can be cared for successfully.

Never mix chicks of different ages.

Confine the hen until the chicks are weaned.

The coop for hen and chicks should be well ventilated, easy to clean, and of sufficient proportions to insure comfort.

The early hatched pullet is the one that begins to lay early in the fall, when eggs are high in price.

The cockerel that can be marketed as a broiler in March or April brings more money than the one marketed in June.

A PRIMITIVE INCUBATOR

Downy chicks and ducklings are just beginning to make their appearance, but the Chinese method of hatching as many as 500 duck and chicken eggs in one sitting has not yet been adopted in this country. Unhusked rice is used for the purpose, and when this has been roasted it is either cooled by a fanning process or the wind is allowed to blow through it until it is lukewarm. The breeder then sprinkles a three inch layer of rice in the bottom of a wooden tub, and on this surface places about 100 eggs. Another layer of rice about two inches thick is spread over them, and on this layer eggs are also placed, and the tub is filled in this way until there are six layers of rice and five layers of eggs, making 500 eggs in all in the tub.

Every 24 hours the rice has to be heated, and for this purpose the eggs have to be removed, the bottom layer this time being placed on top, and the other layers one row lower down, the eggs that occupied the central position in the tub now being placed at the edges. There is some difficulty in gauging the exact time at which the eggs will hatch, and unless care is taken, some of the young ones are likely to be smothered. This is, of course, the point at which the ability of the expert is shown.—Answers.

MARKETING

Harry M. Lamon.

Uniform products command the best prices. Purebred fowls produce uniform products.

Begin marketing the cockerels as soon as they weigh 1½ pounds or attain a marketable weight.

Market white-shelled and brown-shelled eggs in separate packages.

When selling eggs to the country merchant or cash buyer, insist that the transaction be on a quality basis.

Ship or deliver eggs twice or three times weekly.

Small or dirty eggs should be used at home.

When taking eggs to market they

There is Only One "Royal Table Queen"

There are many breads, but only one Royal Table Queen. A single loaf will tell you this. You can't help but note the difference—and all in favor of

**ROYAL
TABLE QUEEN**
"The Perfect Bread"



What makes this bread so exceptionally good? Some of the things that must be given credit are a secret formula, cleanliness and sanitation, the master bakers and the "Mueller Patent" Grooved Pan, which is responsible for the even bake of this bread. Every loaf is baked thoroughly, from crust to center.



Let "Royal Table Queen" be the household word for bread. All grocers are acquainted with the name; they know it stands for "the perfect loaf." It's the bread that pleases everyone.

Royal Baking Co., Salt Lake City, Utah

should be protected from the sun's rays.

Infertile eggs will withstand marketing conditions much better than fertile eggs.

EGG PRODUCTION

Harry M. Lamon.

Produce the infertile egg.

Infertile eggs are produced by hens having no male birds with them.

Removing the male bird has no influence on the number of eggs laid by the hens.

The hen's greatest profit-producing period is the first and second years, and unless a hen is an exceptionally good breeder she should be disposed of at the end of her second laying season and before starting to molt.

Few eggs can be expected until the pullets are matured.

If possible, mark the pullets that lay in the fall, and use them in the breeding pen for the following spring.

Soft-shelled eggs are often caused by fowls being confined, becoming overfat, and lack of mineral matter.

CHICK CHATTER

H. L. Kempster.

Well fed is half raised.

Poor feeding kills many chicks.

Give no feed for two days after hatching.

Leg weakness results from lack of bone-making feed.

The first chick feed should be a dry mixture of cracked grains. Cracked corn, wheat, kafir, and pin-head oats are all good.

Feed sour milk or beef scrap to help build muscle, feathers, and bone. One per cent of bone meal should also be included in the ration.

Feed three times a day and no more, but add rolled oats to the chick feed twice a day and stale bread

FOR SALE.—75 h. p. C.L. Best, Caterpillar type, Gas Tractor, in good shape; 4 practically new Studebaker wagons, cook house, new blacksmith shop, a 10-bottom Deere plow, clearing rails, and bunch of other necessities. Price \$3500. Call on or address Jones Bros., Delta, Utah.

—BABY CHICKS—

S. C. White Leghorns Fall Delivery

Place your order now for delivery during September, October, and November. September \$10.00 per 100; October \$11.00; November \$12.00. Prices in large lots, furnished on application. Also booking orders in Browns, Rocks, Reds and Black Minorcas.

THE ORLAND HATCHERY
Orland, Glenn Co., California.

crumbs or corn bread will do if there are no rolled oats on hand.

Feed finely cut lettuce, onion tops, or other green stuff if the chicks cannot be allowed to run on grass, for they must have something of this kind to keep bowels working properly.

Poor growth and lack of thrift usually indicate something wrong with the feeding. A few grains of sand during the first few days after hatching help to prepare the stomach for food later, though the chick is still living on the yolk drawn into its body just before hatching.

Commercial ground feed may be fed or a coffee grinder may be used in cracking the grains. Never feed wet mixtures until the chicks are at least five weeks old. Use corn meal that has not heated in sack or bin and place a wire screen over it in the trough to prevent it from being scratched out and wasted.

CAME BACK ALL SMILES

"He went to see the dentist,
The picture of despair;
He came back with a smiling face—
The dentist wasn't there!"



For Greatest Satisfaction Use
DOUBLE SERVICE
Automobile Tires
Guaranteed 7,000 Miles Service
Absolutely Punctureproof

Double Service Tires are made double the thickness of the best standard make tires.

This 100% greater wearing surface naturally gives that much more mileage and service. The average of 12 miles of tough fabric and one inch surface tread rubber makes these tires absolutely punctureproof.

These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—the air space and pressure being the same.

They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use in the U. S. government and European War service. Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer:

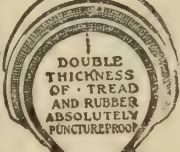
PRICES

Tires Tubes	Tires Tubes
30x3 in. \$8.60 \$2.30	36x4 in. \$17.45 \$4.65
30x3 1/2 in. 10.85 3.10	36x4 1/2 in. 21.20 6.00
32x3 1/2 in. 12.75 3.20	36x4 3/4 in. 22.50 6.75
32x4 in. 15.75 4.20	37x4 1/2 in. 23.50 6.20
34x4 in. 16.70 4.35	37x5 in. 26.30 6.40

All other sizes not included in above list also furnished. Non-skids at 10% additional. Terms: Payment with order at above special prices. A 10% discount allowed on orders for two or more tires. All personal checks must be certified.

Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Descriptive folder upon request. Write for it.

Double Service Tire & Rubber Co., Akron, O. Dept.



HOME

CUCUMBER PICKLES—

SWEET AND SOUR

Make a brine of salt and boiling water strong enough to float a medium sized potato, add to this one cup of sugar. When cold it is ready for the pickling jar or barrel. Put in the bottom of the barrel a layer of grape or cabbage leaves then add the cool brine. To this add a layer of cucumbers from six to eight inches deep, then put in another layer of leaves. These help the cucumbers to keep fresh and prevents them from changing color. If the cucumbers are added at the time of each picking, treat them in the same way or they can all be packed at the same time. After all the cucumbers are used place on top another layer of leaves; next a cloth wrung out of cold water. On this place a weight. After these have stood for three days they are ready to prepare for the table or they can be kept in this brine all winter and just taken out as needed. This latter method has been adopted by many housewives and found to be the most satisfactory. To prepare for the table take out and freshen to suit the taste by placing in cold water. For six quarts of the freshened cucumbers dissolve a lump of alum the size of a walnut in boiling water and to this add enough more hot water to cover the cucumbers and pour this over them and let stand for thirty minutes. This makes them nice and brittle.

For the sour pickles pack cucumbers in jars alternating with layers made from ginger-root, red peppers and stripes of horse-radish (the wild variety that grows along the road side and in the fields). The roots are best but the leaves and stems do very well. After the jars are filled pour over them enough hot vinegar to cover them. Be sure that the vinegar is of a good grade if you want first class pickles. It is best to make the bottles air-tight as in the case of fruit if you wish to keep them for several weeks.

Sweet pickles. Pack the cucumbers in the jars alternately with layers made from stick cinnamon, cloves and stripes of horse radish. Make a syrup of good vinegar using two parts vinegar to one of sugar. Pour over packed pickles while hot. Can be kept same as sour pickles.

PLAN YOUR HOME IN A SYSTEMATIC WAY

Greta Gray.

In building a home, plan it so that it may be added to in time. The farm house if small should be planned to "grow" and if large should be planned to "shrink" so that a small family may live in part of it comfortably with a portion shut off.

Any house should be a place where each member of the family may find quiet and rest, recreation and opportunity to achieve the maximum efficiency and happiness.

There are three distinct groups to be considered in planning a house, (1) the family, (2) servants, (3) guests. The house should have (1) rooms where the whole family may gather together and meet their friends, and enjoy music, books, and pictures. (2) Rooms for rest and

Parowax

THE ORIGINAL FLAVOR

is retained when Parowax is used in preserving fruit.

Most housewives know this and use only Parowax when they "put up" fruit, because of its purity and fineness. It prevents mold and fermentation by making jelly glasses and jars air tight.

Parowax is guaranteed under the pure Food and Drugs Act. It is sold by reliable dealers in one pound cartons.

If bees knew about Parowax they'd have more time to make honey

THE CONTINENTAL OIL COMPANY

(A Colorado Corporation)

Denver Butte Pueblo Albuquerque Cheyenne Boise



STARS MAKE DOLLARS

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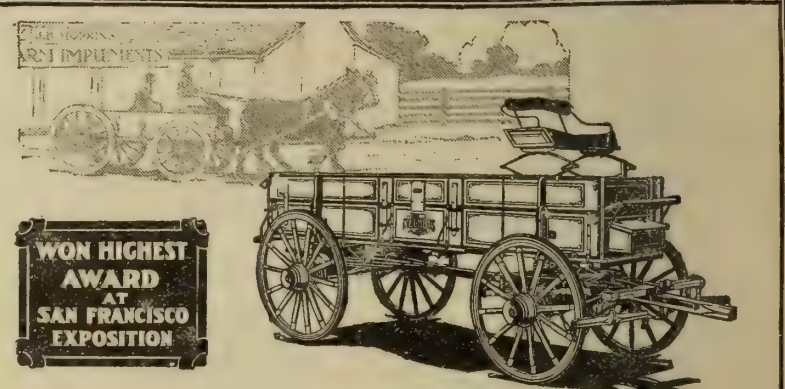
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(INCORPORATED)

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acres in the Bear River valley. Water right from the Bear River canal. All under cultivation. \$80 per acre; \$200 down and ten years on the balance, at 6 per cent interest.

2 1/4 acres adjoining the railroad station and on the state highway. Five acres of water. Balance of the farm is level and easy to irrigate. Water can be had for the whole place. No incumbrances. Will consider exchange for Salt Lake City property or sell on exceptionally easy terms.

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We have some very excellent farms for sale in southern Idaho on easy terms and low rate of interest.

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Farm and Ranch Dept.

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And must have it, if it is to be efficient in its functions. The craving is perfectly natural and therefore healthful. There is no danger in eating plenty of sweets, as the body promptly indicates, by natural desire, when it is satisfied.

Eat candies made in Utah and Idaho, because they are pure and wholesome. When you use sugar in the preparation of foods or for canning fruit, use—

UTAH-IDAHO SUGAR
ABSOLUTELY PURE

privacy, a place where each member of the household may be safe from intrusion, to sleep or work or mediate. (3) Rooms for carrying on work required for the physical need of the family. These different divisions must be grouped together and connected by halls and stairways.

Bedrooms, study and sleeping porches are best if secluded from the rest of the house as much as possible so that they may be quiet places.

The kitchen group of rooms should be located so that odors of cooking will be carried away from the house. There must be easy entrance from the kitchen to the cellar, dining room, store room, pantry and out of doors. In order to better confine kitchen odors and noises to the working area, a pantry between kitchen and any part of the living area or bedroom part of the house are desirable. A kitchen nearly square is best, for in a square kitchen the distances to be traveled are less than in one which is long and narrow.

For the men working on the farm, the farm house ought to have a wash-room. It should have in connection with it a shower bath and toilet and there should be closet space for working clothes. This room is best on the first floor and should be so located that it will be the first point of entrance on coming from the barn to the house.

The office which each farm house should have, need not be a large room. It ought to have a door to the outside or a door into the men's room so that the farmer may use it without going through other parts of the house.

SAVING ON THE FARM

Systematic saving by farmers is not so generally practiced as among salaried workers in the city. The farmer has not been given to saving by means of endowment insurance or savings banks, though he has been a strong supporter of building and loan associations in many instances. The principal difficulty has been that his income has not been so regular as the weekly pay check of the city worker and it has not been so easy to put aside a small sum regularly. The well balanced farm now has a more steady income. The milk check on a dairy farm is almost as regular as the pay envelope in the factory, and has done much to systematize saving on many farms.

The man who needs to practice this form of thrift most effectively is the young farm hand who is saving against the day when he will become a tenant and later when he will buy his own farm. If as his regular monthly pay is received he sets aside \$10 to \$15 in a savings fund, in five years he will have capital for the purchase of a modest equipment with which to start on a rented farm. Another five years of regular saving will place him in position to make a first payment on a small place of his own.

The ambitious young man is likely to regard this period as discouragingly long, and small amounts regularly put aside as trifling, but this rate of progress is even more rapid than actually occurs in most instances.

Someone has well said that it takes a young man 10 years to get ready to farm, another 10 years to learn to operate his farm properly, and 10 years more to learn how to be the best farm citizen. By that time the average allotted span of life has expired.



**Hop Aboard
with the
Marines and
Sailors of the
U. S. A.**



Get your feet into the socks the marines and sailors wear—long-lasting, soft, well-knit, foot-comforting Durable Durham Hosiery.

Yes, the marines and sailors wear 'em, work in 'em, play in 'em, and, if need be, they'll fight in 'em, too. And the reason:

Durable Durham Hosiery stands the gaff of government inspection, the most rigid of examinations. Each separate thread of each separate sock must measure up. Durhams do. And this is the evidence:

404,416 pairs of Durable Durham Hosiery were recently shipped to the Navy Department. 100,000 pairs were for the marines, 16 pairs were rejected. 304,416 pairs for the sailors, only 5 pairs weren't up to snuff. And these only because they had been damaged in packing.

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There is a sock for you in the Durable Durham Line that's got every bit of the comfort and the durability that the government specifications demand for the wear of the sailors and marines—the identical strong, reinforced toe and heel—knit of the same yarn and with the same care—but it is a smarter sock, with uppers that are sheer and light.

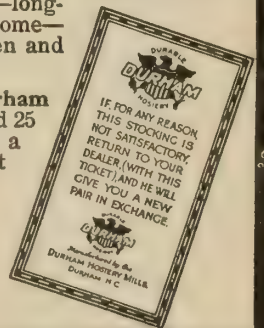
We have named this sock 1700 G. S. It is a regular number of the Durable Durham Line.

It will wear like iron—there is a fit for every foot, and 1700 G. S. is surely smart. Exactly the same—long-wearing, strong, grateful to the feet and handsome—are The Durable Durham stockings for women and children.

And the wonderful part is that Durable Durham for men, women and children sell for 10, 15 and 25 cents the pair. Each pair is guaranteed with a guarantee so broad and strong that you might have written it yourself. This guarantee is made possible only by expert manufacture and rigid factory inspection.

DURHAM HOSIERY MILLS
Durham, N. C.

This guarantee is on every pair of Durable Durham



He who develops the habit of thrift early lengthens the period of independence which he may expect after he has established himself.—Country Gentleman.

—O—
An old German was delivering an

address on military science. "My son, Otto," said he, "goes of to war and wears a high hat. Along comes a bullet—right through the middle of it. Had he been wearing a cap, Mein Gott! Otto would have been killed!"—Field and Farm.

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The size of business often has much to do toward making the farm profitable.

Here is a small farm of 50 acres, **JUST WHAT YOU WANT**, with a rich, black loamy soil. Well adapted to the raising of beets, alfalfa, fruit, garden truck, etc. Good market for the garden truck near by. A good permanent investment for a man that wants an ordinary sized place that he can make a good profit out of.

Prior water rights at \$1.00 per acre if used.

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Kill The Flies Now

Best Method of Control Given.

The best time to kill the fly is always now. But during August, the great number and the stupidity of flies makes them particularly obnoxious. Statistics show that the greatest number of deaths and cases of sickness among children occurs during the high fly time of July and August. So safety as well as cleanliness demands that a vigorous fight be made upon the fly during this month.

When we are told that comparatively few houseflies succeed in passing through the winter without succumbing to unfavorable weather conditions, we conclude that their rate of increase is extremely great.

In the eight generations resulting from one adult fly, there are 988,474,776,530 offspring. One fly is about one-fourth of an inch in length; then if all the flies above could be placed end to end, they would make a line of flies 24,343,220,344 feet long. The distance to the moon is only 1,256,640,000 feet. This string of flies, the progeny of one female, could reach there and back several times.

The Breeding Place of Flies.

The housefly breeds readily in almost any decaying vegetable matter, but not in animal flesh as is so often asserted. Horse manure is the favorite material selected by the housefly for egg deposition and supports the growth of perhaps ninety-five per cent of all the housefly larvae. Lacking horse manure, the fly usually selects the excreta of human beings, pigs or poultry. The dishwater and refuse thrown out the back doors of many homes sometimes affords a convenient breeding place for flies.

It is admitted by medical men generally that the housefly may be the carrier of many intestinal diseases. Typhoid, cholera, dysentery, diarrhea in infants, and tuberculosis are some of the principal diseases carried by this insect.

Control Measures.

To rid the house of flies, the best known remedy is the following: Soak a piece of bread about one and one-half inches square and one-quarter inch thick in a little milk; then place the bread in a saucer and add a teaspoonful of ordinary formalin. Add sufficient water to raise the level of the liquid in the saucer until it almost reaches the upper surface of the bread. Sprinkle over the bread and liquid a spoonful of sugar.

This saucer should be placed on a window sill in the evening and the blinds drawn before all the windows except the one before which the saucer is placed; this shade should be drawn two-thirds the way down. Early the following morning the houseflies will go to the window that is partially lighted and partake of the liquid in the saucer. Within ten minutes after a fly has taken the least sip of the liquid he will be killed. This method cannot be considered the least dangerous to the children in the house as the taste is very repulsive to human beings. If taken into the mouth of the child vomiting occurs but no serious illness.

Poisoned fly paper and poisoned liquids commonly sold upon the mar-

ket should be avoided, as many cases are reported each year of children being dangerously ill or even losing their lives through gaining access to some of these articles.—Harold R. Hagan, Entomologist, Utah Agricultural College.

HOW TO POISON RODENTS

To assist in the destruction of such noxious rodents as mice, ground squirrels, and pocket gophers, the Government specialists recommend a number of poisons. Some of these are as follows. In their use, however, it is pointed out every precaution must be taken to keep the poison out of the reach of children and domestic animals.

Prairie-Dog Poison.

Dissolve 1 ounce of strychnine sulphate in $1\frac{1}{2}$ pints of boiling water. Add 1 heaping tablespoonful of gloss starch, previously mixed with a little cold water, and boil until a clear paste is formed. Add 1 ounce of baking soda and stir to a creamy mass. Add one-twelfth ounce of saccharine and one-fourth pint of molasses and stir thoroughly. Pour over 13 quarts of milo maize of feterita and mix well until grain is evenly coated. Allow to dry before using. If hard water is used, add one-fourth pint of vinegar for each ounce of strychnine.

In bushel quantities use, as above directed, $2\frac{1}{2}$ ounces strychnine sulphate, one-fifth ounce saccharine, $2\frac{1}{2}$ ounces soda, $1\frac{1}{4}$ ounces of starch, $1\frac{1}{2}$ quarts boiling water, and five-eighths pint molasses.

Scatter poison when the natural food of the prairie dog is scarce on a clean, hard place near the hole, 1 quart to 40 holes.

Jack-Rabbit Poison.

Alfalfa poison.—Dissolve 1 ounce of strychnine sulphate in 2 gallons of boiling water and sprinkle over 16 pound of leafy alfalfa hay, chopped in 2-inch lengths. The poisoned hay may be scattered in small heaps along rabbit trails in inclosures from which stock is excluded.

Grain poison.—Mix together 1 ounce of powdered strychnine (alkaloid) and 1 ounce of baking soda. Sift this into 1 pint of thin hot starch paste and stir thoroughly. (The starch paste is made by mixing 1 heaping tablespoonful of gloss starch in a little cold water, which is then added to one pint of hot water and boiled until a clear thin paste is formed). Add one-tenth ounce of saccharine and stir.

Apply to 12 quarts of milo maize or feterita. Mix well until grain is evenly coated. Use as directed for alfalfa poison. If the powdered strychnine alkaloid is not available, strychnine sulphate crystals may be used if prepared as for prairie dogs.

Pocket-Gopher Poison.

Mix together while dry one-fourth ounce powdered strychnine (alkaloid) and one-sixteenth ounce of saccharine and sift over 5 quarts of dampened baits made by cutting sweet potatoes or carrots into one-half to three-fourths inch cubes. To insure even distribution of the poison stir baits while applying the powder.

The gopher's runway may be located several inches below the surface by probing with a bluntly pointed stick. An opening should be made to admit 2 of the baits and then closed.

Rat Poison.

To 1 part of barium carbonate and 4 parts of flour or meal, or 1 part of barium carbonate and 8 parts of oat-

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Improved Powers Combined Well Boring and Drilling Machine

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for wells to water stock and for irrigation. Write for free illustrated circulars showing different styles.

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Save Time and Money, Too

Write for free book and letters from hundreds of farmers telling how they make ditches easily and quickly with

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Cuts ditches, levels bumps, fills gullies, makes levees, builds roads. All-steel, adjustable and reversible for wide and narrow cutting. 10 days' trial. Money back guarantee. Owensboro Ditcher & Grader Co., Inc., 324 Evans Bldg., Denver, Colo.

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MICA AXLE GREASE

Gives long life to your wagon. The mica makes a smooth bearing surface — prevents friction and wear.

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Our foot, steam or gasoline power mixers will solve the problem for you. Made in several sizes and endorsed by all who have used them. Made in Utah.

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Placed anywhere, **Daisy Fly Killer** attracts and kills all flies. Neat, clean, ornamental, convenient, and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Ask for

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President.

meal, add a little cold water and mix thoroughly into a stiff dough. The barium carbonate may also be sprinkled on fish, toasted bread, or moistened bread and butter.

OFFICIALS WANTED,

NOT ORNAMENTS

(This timely editorial is from the Deseret News and we believe it is a good thing to pledge those who want our votes this fall to carry out these suggestions no matter what their political faith may be.—Ed.)

It is to be regretted that a letter prepared by Mr. C. W. Watts, to be read to the caucus of the delegates from the so-called "cow counties" in the recent Republican state convention of Ogden, could not in some way have gone into the record and its suggestions into the platform of that assemblage. There having been no opportunity for its perusal or consideration, it was denied the notice which some of its excellent recommendations deserve. One of these suggestions The News is disposed to rescue and hold aloft as worthy the most serious thought, not only of the Republican party to which it was addressed, but to any and every party which may hope to win success through the vote of the people.

Mr. Watts in his letter emphasizes the sentiment that taxation is too high and out of all proportion to the demands of progress and real thrift; and he advises that, in order that this burden may be lightened, there be an immediate "clean-cut trimming and pruning of the many unfruitful branches of our community tree." We quote at this time just one of the remedies proposed by him in his "bill of particulars":

"First, make it mandatory under the law that the principals in office shall perform daily labors in a just and reasonable ratio to the generous salaries received from the taxpayers and cease to impose these labors and duties upon deputies, while Mr. Principal attends to his own affairs and pleasures. On this item alone thousands of dollars annually can be and should be

saved to the taxpayers."

This wholesome criticism and counsel is most timely and important. It can be amplified and reiterated indefinitely without any thought of partisan bias, and cannot be too quickly seized upon as a political principle by all the parties and candidates who are seeking indorsement at the November ballot box. A practice, not limited to either party, has come into vogue whereby principals in office delegate their work to deputies, and go galloping around the country on pleasure or in the pursuit of their own private business. To call it by its proper name, this practice has become a scandal and a disgrace; and we violate no confidence in saying that the party or candidates which shall not propose to correct it, may begin at once to prepare for the rebuke and defeat which such neglect deserves.

Questions and Answers

Utah Farmer:

Gentlemen:—"About March 10th I treated my wheat with formaldehyde according to the method usually used. As the weather was stormy I left the grain lying in the bags in which it was treated, for 20 or 30 days before planting. It was planted with a drill in the usual way, but only ten per cent of the seed germinated. Can you tell me the reason for this trouble?"

A Subscriber.

Answered by Dr. F. S. Harris.

The germination of grain is often interfered with by making the formaldehyde solution too strong. If, however, you are certain you had the right strength, it is probable that the injury was caused by leaving the grain in the wet bags so long that the formaldehyde acted more vigorously than it would have done ordinarily. In the regular treatment the grain should be removed from the bags and allowed to dry after a few hours. If it is left wet too long the formaldehyde continues to act until all of the gas has been evaporated.

Morgan, Utah.

Utah Farmer:

Gentlemen:—Will you please answer the following question for me as soon as possible? Will the Alfalfa Weevil bother dry farm lucern, if not do you think I could raise lucern seed here in Morgan County? I have a 10 acre dry farm that is a little gravelly and it is almost impossible to raise dry farm grain on this ground, that will give a fair return for the time and labor put on it.

This ground will raise one pretty good crop of alfalfa as that is what was on the ground before I commenced raising grain, I have just cut my grain this year and it went 10 bushels per acre.

A little information regarding the raising of alfalfa seed will be greatly appreciated. Yours very respectfully,
Henry Heiner.

Answered by F. S. Harris.

Alfalfa on dry land is attacked by weevil the same as that on irrigated land, and the injury is even greater since the crop does not have sufficient moisture to enable it to overcome the injury. If you will write the Experiment Station at Logan for Circular November 10 on "The Control of Alfalfa Weevil" you will obtain information that will help in handling the pest.

The best available publication on alfalfa seed production in United States Department of Agriculture, Farmer's Bulletin Number 495. A copy of this may be had free by writing to the Secretary of Agriculture, Washington, D. C.

BACK TO NATURE

A hen is not supposed to have much common sense or tact, yet every time she lays an egg she cackles forth the fact. A rooster hasn't got a lot of intellect to show, but none the less most roosters have enough good sense to crow. The mule, the most despised of beasts, has a persistent way of letting people know he's around by his insistent bray. The busy little bees, they buzz; bulls bellow and cows moo; and watch-dogs bark and

WANTED

Copies of Utah Farmer (Deseret Farmer) Vol. 2, Number 10-11-16-17 and 19. These numbers are wanted by the U. S. Department of Agriculture Library to complete their files. Can any one supply them? Send direct to this office.

UTAH FARMER

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ganders quack; and doves and pigeons coo. The peacock spreads his tail and squawks, pigs squeal, and robins sing and even serpents know enough to hiss before they sting. But man, the greatest masterpiece that nature could advise, will often stop and hesitate before he'll advertise.—Exchange.

IMPROVEMENT OF THE POTATO IN UTAH

(Continued from page 3)

ative means. We will then turn to a practical plan:

In the fall of the year, before the vines wilt, go through the field and pick out the most vigorous plants having thick, sturdy, upright, slightly spreading haulms with fairly thick, large leaves. Mark these plants and, when it is time for harvesting,—when the tubers are firm and the skin is rough and tough—harvest them with a spade before digging the main crop. Keep each separate and then sort out from these the very select hills having the characters enumerated above present. Do not let sentiment sway you and persuade you to select a hill "just to try it" for there will be enough disappointments from the best hills that are selected. Most rigorous, merciless selection is the keynote of success in this work. Next spring plant the few selected hills, each hill in a separate row. That fall repeat the same rigorous selection in this plat that you carried out in the general field and save the progeny of the best hills for plat No. 3 the following year. Keep records of performance of each tuber and hill and the progeny from the original hill (selected from the general field for Plat No. 1) which has best maintained its vigor and productiveness and other desirable characters for the three years should be planted in Plat No. 4 and the remainder of Plat No. 3 to the general field in connection with those from Plat No. 4 as you will have yields from both No. 3 and No. 4 the same years if you maintain a continual selection. The tubers from each plat

should be planted separately, however, and probably the major part from the plants selected from the general field planting in Plat No. 1 should be selected from the field planted from plat No. 4 as it will probably carry the strains of the constant producers of high quality potatoes. Plat No. 3 will be your multiplication plat to furnish seed for the general field and to provide further selection of superior hills for Plat No. 4. The progeny of each tuber should be planted in a separate row and separation carried on with reference to the progeny of original hills selected from the field so that the best performing strains can be selected. A high producing, high quality hill might be selected which will perform for one year but produce progeny which will not repeat. The aim should be to select for constancy and desirable characters the same as you would breed your cattle to bulls having records of good performance and good ancestors instead of to one showing desirable characters but having a poor showing in their calves.

To condense, the roads to improvement of the potato by the practical farmer in this state are:

Sane irrigation! careful thorough cultivation of the growing crop.

Thorough tillage to maintain soil in good tilth.

Intelligent, rigorous seed selection.

To subscribe for a trade paper and then not read it is like sending for the doctor to come in and then refusing to let him see the patient.—Exchange.

It is not helps, but obstacles; not facilities, but difficulties that make men.—Ex.

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Travel More
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Ask any Oregon Short Line agent for further details, or write,

D. S. Spencer, General Passenger Agent,
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The evenings are not half as long and uninteresting when there is music in the home.

Let the young folks study music

The happiness that they will bring into the home will more than repay you. The pleasure you will get out of the playing and singing and the good times will banish the cares and worries of every day life.

Have them Study Piano

The Utah Conservatory of Music is putting out a course of Piano Studies by Prof. J. J. McClellan that is a masterpiece. It carries in it the result of all his experience as a performer and instructor. A wonderful set of lessons from the pen of this stellar performer. Something that can be understood by everybody. Just the thing for you who are far away from the musical centers, and would like the instruction of a Master.

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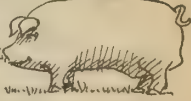
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REGISTERED JERSEYS
9 Cows and a Bull**

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The cows are not culls but are richly bred and of good dairy type. They all have dairy records of milk production.

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Colds and Roup.—Disinfect the drinking water as follows: To each gallon of water add the amount of potassium permanganate that will remain on the surface of a dime.

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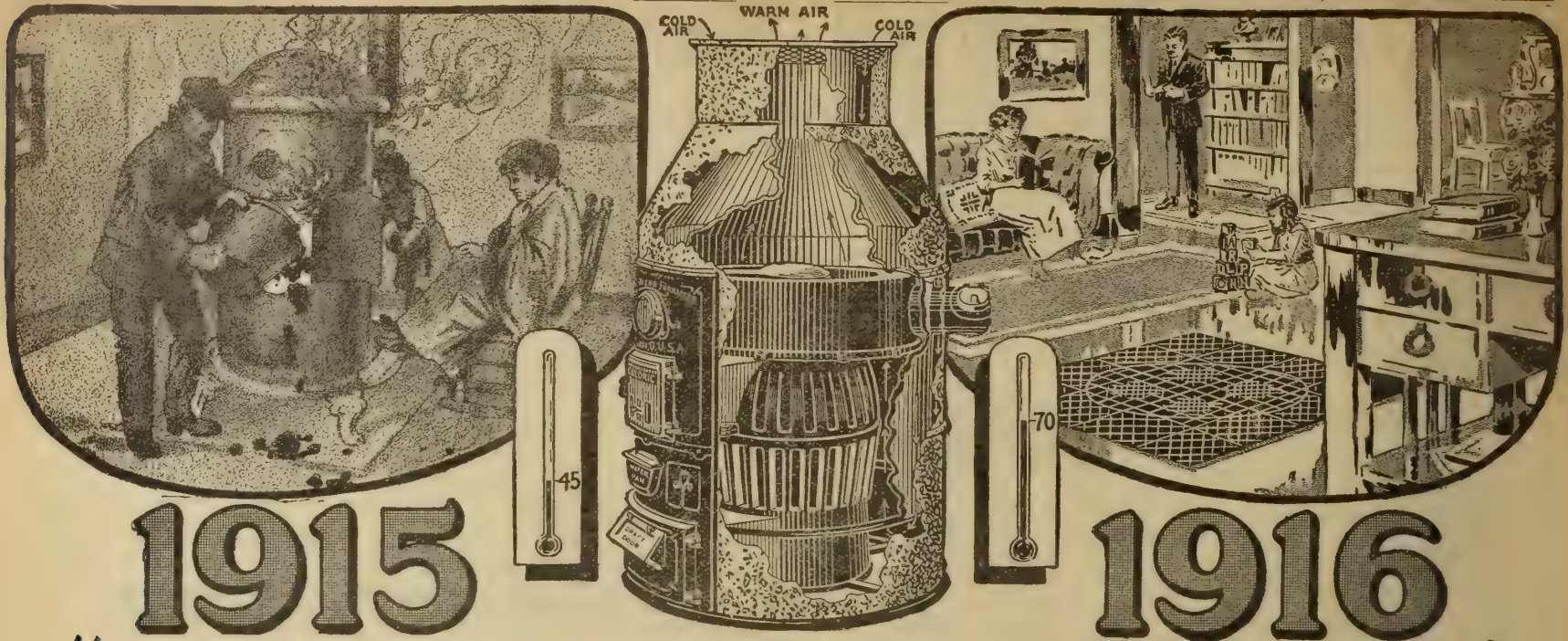
iodin and carbolated vaseline to each sore.

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1915

1916

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35%
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OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 4

LEHI AND SALT LAKE CITY, UTAH

AUGUST 26, 1916

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The Irrigation Canal has carried water to many an undeveloped tract of land.

Agricultural Lesson

J. C. Hogenson.

Lucern, or alfalfa, is by far the most important leguminous crop grown in this part of the country. It not only furnishes an excellent hay, but it starts growth early in the spring, grows so quickly and keeps green so long that it provides green forage from early spring till late fall. Besides this, it acts as a good fertilizer in improving the fertility of the soil by adding the element nitrogen.

History of Lucern

Lucern is one of the oldest plants under cultivation. It is a native of western Asia and was well known to the Medes and Persians. When Xerxes invaded Greece about 450 B. C., he brought lucern with him and so introduced it into Europe. At the time of the Christian era, it had become well established in Roman agriculture, where it was known as "the best of fodder plants." Pliny the elder speaks of it not only as a good food for animals, but mentions also that it improves the soil upon which it is grown. From Rome it spread into Spain and France. At the time of the Spanish invasion, it was brought into South America and Mexico. From South America in 1854 it was brought into California. The plant received little attention there at first, but in 1874 a demonstration of its worth aroused the interest of the people. A Mr. Miller had sown hundreds of acres of lucern in one of the rich valleys of California and was fattening thousands of cattle upon it. His success led to its rapid spread until the plant made its way to Utah and surrounding states. It has

steadily made its way eastward, and in 1886 the first field was sown in Ohio. In an early day it had been introduced into the eastern United States before it came to California. In 1791 it was brought from Europe to New England, but it made little headway, and during the rapid westward expansion of agriculture, it was soon forgotten until it made its way eastward from California.

Useful Facts About Lucern.

Lucern is a deep-rooted plant. Its root system consists of a single top root running down from one to 10 feet and then dividing into a few branch roots. Sometimes several branch roots set out from the top root near the crown. The main roots are very smooth and free from fibrous roots. Some root hairs are found in the first surface foot of soil and also at the extremities of the roots.

Lucern, or alfalfa, as it is everywhere called in the east, has the power of taking the free nitrogen from the air, of using it in its growth, and of storing the nitrogen in large quantities in the soil to be used by succeeding crops. It does this by means of bacterial organisms which, under favorable conditions, develop upon its roots.

If we examine the small roots of a lucern plant, we shall notice small oval knots, or nodules, on them. These nodules are the homes of the bacteria, or microscopic plants, which have the power of taking the nitrogen from the air and storing it in the plant and in the soil.

The lucern leaves, which contain a large percentage of the mineral matter held by the plant, are very easily lost in handling, so that great care should be taken to have the hay in just the proper condition before attempting to move it from the field or stack. The leaves have about 60 per cent of the total nitrogen contained in the part of the plant that is above ground.

Composition of Lucern.

Lucern and all of her feeding stuffs may be said to contain the following combination of substances in the form of food stuffs: (1) water; (2) dry matter, which consists of ash and organic matter, the latter containing protein in the form of albuminoids and amids, also fats and carbohydrates, which consist of nitrogen free extract, and crude fiber. We shall speak of these in the order given.

Water and Ash.

The amount of water in a plant varies greatly according to the stage of development of the plant, being most abundant in young plants and becoming less as the plant matures. The dry matter is that part of the plant which remains after the water has been driven off.

Ash is the mineral matter which is left after the plant has been burned. The organic matter is that portion of the plant which is destroyed by burning.

Organic or Food Parts.

Protein is the name of a class of compounds containing nitrogen. They may be divided into albuminoids and amids. The albuminoids are the nitrogenous substances which go to make up the flesh of the body. The amids are nitrogenous compounds soluble in

water. They are found principally in immature plants.

The fats are the reserve materials which the plant may draw upon in case of need.

The carbohydrates consist of combinations of the elements carbon, oxygen and hydrogen. They are the heat producers in the animal body. The nitrogen free extract consist of the starchy part of the plant. The crude fiber is the woody part of the plant, and is the least digestible of the food constituents of which the plant consists.

The Average Composition.

The following figures give the average composition of lucern, fresh from the field, air dry and water free.

	Ash.	Prot.	Fat.	Fiber.	N.F.E.	Water
Fresh	2.83	4.61	.89	7.25	12.27	72.14
Air dry	99.30	15.15	2.90	23.84	40.30	8.50
Waterfree	10.18	16.60	3.20	26.12	44.15	00

The above table is compiled from the analyses of fourteen experiment stations.

When to Cut Lucern.

The value of a crop of lucern depends upon three factors: first, the composition; second, the digestibility; and third, the amount of each constituent present. If we consider the yield lucern increases in dry matter to the end of the season, the heaviest gain being made at the time the buds are unfolding. During the first weeks of bloom we have the highest percentage of albuminoids, which are easily digested. After early bloom, as the plant grows older, its food value pound for pound decreases. To obtain a large amount of dry matter and the largest percentage of albuminoid, other proteids and fats, and the lowest percentage of fiber; lucern should

(Continued on page 14)

WHEN THE LIGHTS ARE LIT---

The evenings are not half as long and uninteresting when there is music in the home. Let the young folks study music



The happiness that they will bring into the home will more than repay you. The pleasure you will get out of the playing and singing and the good times will banish the cares and worries of every day life.

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Field Selection of Corn, Potatoes and Forage Crops for Seed

By Geo. Stewart, Instructor in Agronomy, Utah Agricultural College.

The grains are typical seed plants. The small-grains tiller, or stool, that is, sent up a number of stems from one root-system. This bunch, known as a stool, constitutes the plant—the unit of selection. It is necessary, however, to remember that in the case of corn the separate stalk is the plant unless it bears branch stalks called “suckers,” which are counted bad, and which should perhaps be pulled off as they start. On the other hand, potatoes are not seed at all but cuttings, or sets, from enlarged stems called tubers. The eyes are simply buds. The hill is the plant and represents the unit to be chosen or rejected. Forage crops are also true seed crops.

Corn
In much of Utah, corn is an important crop. South of Salt Lake City except at high altitudes it is or will be an important grain crop. Some areas farther north likewise mature it easily. With the introduction of silos, all of Utah and even more northerly sections will grow much corn.

Selection
With corn the process is very similar save for the fact that the stalk and not the hill is the individual plant. Since, in much of Utah, one of the problems is to get the corn ripe before frost, it is advisable to make a selection of the first-ripened stalks. When the first husks turn white, the farmer should, as in the case of the small grains, pick out a heavy-yielding field and the best part of that field. Let him now select early plants from areas that have uniformly full stands. Total yield of grain is most important; very small ears, suckers, crooked stalks, and malformations of all kinds are objectionable. It is of course presupposed that the corn is of one variety and adapted to the locality. The husks should be partly stripped back from the ear to afford a good look at the grain. Ears well filled at tip and butt, and all over the cob bear more grain than those less completely filled. Deep, close-fitting kernels are also desirable much more so with dent than with flint varieties. If more than one good sized ear is borne on the stalk, it is all the better.

Storage
Corn needs more attention to dry it properly than do small grains, because it contains more moisture and may either mold or freeze if handled carelessly. After final rejections are made, the ears may be husked and dried as rapidly as possible without the use of high temperatures. Even a warmed room may be used to advance.

tage. The unshelled grain should be hung in a sack or on strings in a dry place not exposed to heavy frost which injures its growing power, though it hurts small grains very little if any.

Testing Seed Corn
When planting time approaches, the ears should be tested for germination. A good way is to take ten kernels from various parts of the ear including the butt, the middle and the top in equal proportions—say two kernels at five equal intervals. Small squares ruled on the paper or cloth permit several ears to be tested in one pair of plates or in one “rag doll.” If more than one kernel in any test does not grow, the ear from which the kernels come should not be used, for its viability is below 90 per cent. It is better to use only those ears all ten of whose test kernels grew. This can be done if there are a number of extra ears.

Seed-bed and Planting
In a well prepared seed-bed—manured on an irrigated farm—the planting should take place as early as safety permits. It does no good to treat seed corn, because the smut of corn lives in manure and in the soil not on the grain. After planting, cultivation to keep down weeds and proper irrigation is about all the care that is necessary except when ears are planted in rows by themselves to test out individual ears.

Hybrid Seed.
Some growers detassel every alternate row or half of each row—the upper half of one and the lower half of the next—thus securing from each ear of half the stalks some seed they are sure is cross-fertilized. The rows are then tested against each other for weight of grain. In this case the detasseled half row is counted the best seed, and the best row is saved for next year’s plot. In the first case where the grain was mixed, the original selection and the succeeding steps are repeated.

Potatoes
Potatoes respond to somewhat similar selections. Some varieties have much higher yielding possibilities than do others; therefore, the variety chosen is important. One distributing factor in choosing potato seed is that some districts cannot use home grown seed. The North ships to the South practically all the seed used there. Arizona also imports seed potatoes. Some small localities seem unable to produce their own seed. In the West a few growers have small farms in mountain valleys which furnish seed

A Warning to Livestock Men--- How to Secure Help

W. E. Carroll.

The purebred bull law passed at the last session of our State Legislature is a commendable piece of legislation and should mean much to the development of the cattle business of the State. Its value, however, is threatened because unscrupulous livestock dealers find in it a new field for operation. Unfortunately, such men are not slow to recognize such an opportunity. Heretofore, these parasites have confined their efforts chiefly to the stallion business.

Many stallions have been sold throughout the State for more than \$3000 each. Such prices are outrageous in nine cases out of every ten, for the horses are sold without regard to the type of animal best adapted to the needs of the communities, and in too many instances they have been nothing more than culls picked up in some other state at prices possibly as high as \$500. Not all stallion dealers are of this type, but too many of such men have taken good money for inferior horses.

On a recent trip through some of the southern counties it was the writer’s misfortune to see the results of one such piece of questionable work along the bull line. This particular dealer seems to have been a smooth salesman, for he sold many very inferior bulls, not even in good flesh, at prices which should have brought good ones to those sections.

This same dealer is under observation by the American Shorthorn Association. In fact, they have sent a field man West to warn the people not to do business through him, because of the inferior grade of cattle he handles.

This is indeed a serious problem, more serious, in fact, than most of our cattle men realize. If not controlled it means practically the neutralizing of the good effects which would otherwise come from the purebred bull law. Such inferior bulls, even though they are registered, cannot be expected to improve the cattle. Their only possible effect on the herd is a damaging

one. These same bulls, had they not been registered, would in most cases never have been considered good enough to be mated with the females they are now with. A certificate of registry, desirable though it is, has not the magic to correct these deficiencies. A good individual when registered is much to be desired over a good individual of mixed and uncertain breeding, but an inferior sire, whether registered or not, has no place in a breeding herd. Many of these bulls would not even make good steers, so what could be expected of them as sires!

The warning message of this note is to have absolutely no dealings with these parasitic peddlers, no matter what they are selling, and to shun their wares as poison should be shunned.

What, then, is to be done? The answer to this first, last, and all the time, is to go out after the animals needed. There are two safe ways of accomplishing this: write to the breed associations and they will put their field man at your disposal or put you in touch with reliable breeders. For Shorthorns write The American Shorthorn Breeders Association, Roy G. Groves, Secretary, No. 13 Dexter Park Ave., Chicago, Illinois; for Hereford Cattle Breeders Association, R. J. Kinzer, Secretary, No. 1009 Baltimore Ave., Kansas City, Missouri. These Associations have been organized for the advancement of these breeds of cattle and will do nothing which will work a hardship upon the breeders of be disadvantageous to the breed they represent.

The second possibility is to write your Agricultural College at Logan, Utah, that you want livestock from out of the State, and either the Extension Division or the Department of Animal Husbandry of that Institution will co-operate with you in helping to make the best purchase possible. Where the purchase is large enough to justify, arrangements can be made, if such is desired, for a College man who is thoroughly acquainted with livestock conditions in the East (purchasing, shipping, etc.) to go along and assist in getting the animals desired. In purchasing animals under these conditions care is always taken to exclude all unsound and diseased animals. This is an item of great importance which the peddler usually overlooks.

Whatever is done, don’t tolerate the livestock peddler. Don’t keep him fat on your hard earnings. Save this money and get better livestock by doing business direct.

for their large farms in the lower valleys. In most cases selected home-grown seed is best.

After a good variety is chosen, the next most important thing to consider is disease, which may reduce the yield from 5 to 50, or even 100 per cent. Most diseases can be detected by examining the tubers. Absolute freedom from disease, if possible, is desired. Dark spots that will not wash off and that turn black when wetted;

(Continued on page 7)



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From 50 to 100 gallons of disinfectant.

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Associate yourself
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Records of deposits of
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1912	\$3,200,000
1913	3,800,000
1914	4,500,000
1915	5,300,000
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AN INCREASE OF
\$3,300,00, MORE THAN
DOUBLED IN FOUR
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DAIRYING

BALANCED RATION FOR DAIRY COWS

The feeding of a dairy cow should be governed by the cow's capacity to produce milk. By keeping a daily record of each cow's production, the skillful feeder soon finds that some cows in the herd respond to an increased allowance of feed and return a good profit on it, while others are limited in milk capacity and over-feeding them is unprofitable. Profitable feeding requires a thorough knowledge of the individual cows as well as the values of feeds.

The following general rules are given in a new Farmers' Bulletin of the U. S. Department of Agriculture, No. 743, The Feeding of Dairy Cows, as a guide for winter feeding by the inexperienced feeder:

1. Under most circumstances the cow should be fed all the roughage that she will eat up clean, adjusting the grain ration to the milk production. Only when the cow tends to become overfat should the quantity of roughage be restricted.

2. A grain mixture should be fed in the proportion of 1 pound to each 3 pints or pounds of milk produced daily by the cow, except in the case of a cow producing a flow of 40 pounds or more, when the ration can be 1 pound to each 3½ or 4 pounds of milk. An even better rule is 1 pound of grain each day for every pound of butter fat

content, while legume hays, such as alfalfa, the clovers, cowpeas, soy beans and oat and pea, are classed as roughage high in protein. Grain and concentrated feeds are the chief sources of protein, and the mixture should be made to fit the class in which the roughage belongs.

Compounding a Grain Mixture

A few simple rules for making up a grain mixture are given briefly below:

1. Make up the mixture to fit the roughage available. With roughage entirely of the low protein class the grain should contain approximately from 18 to 22 per cent of protein, while with exclusively high-protein roughage the grain ration need contain only about 13 to 16 per cent.

2. Select grains that will furnish the various constituents, especially protein, at the least cost, using home-grown grains if possible.

3. Be sure that the mixture is light and bulky.

4. The mixture should be palatable.

5. See that the grain has the proper physiological effect upon the cow. All these suggestions should be kept in mind in order to obtain the best possible combination of grains. The following table shows the digestible protein content of the more common grains and by-products feeds. The percentage columns are arranged in 5 per cent divisions.

APPROXIMATE DIGESTIBLE PROTEIN CONTENT OF VARIOUS GRAINS AND BY-PRODUCTS.

Average 5 per cent (2.5 to 7.4 per cent).	Average 10 per cent (7.5 to 12.4 per cent).	Average 15 per cent (12.5 to 17.4 per cent).	Average 20 per cent (17.5 to 22.4 per cent).
Corn meal. Corn and cob meal. Hominy feed. Dried beet pulp.	Wheat, ground. Oats, ground. Barley, ground. Rye, ground. Buckwheat, ground. Sorghum grains, ground.	Wheat bran. Wheat middlings. Dried distillers grains (rye).	Gluten feed. Malt sprouts. Dried brewers' grains. Dried distillers' grains (corn). Coconut meal. Peanut meal with hulls. Cowpeas.
Average 25 per cent (22.5 to 27.4 per cent).	Average 30 per cent (27.5 to 32.4 per cent).	Average 35 per cent (32.5 to 37.4 per cent).	Average 40 per cent (37.5 to 42.4 per cent).
Buckwheat mid- dlings.	Gluten meal. Linseed meal (both processes). Soy beans.	Cottonseed meal.	Peanut meal (hulled nuts).

produced by the cow during the week.

3. Feed all the cow will respond to in milk production. When she begins to put on flesh, cut down the grain.

For the most profitable milk production, the cow must be fed a balanced ration at the cheapest price such ration can be provided. By balanced ration is meant the combination of such a proportion of nutrients and in such quantities as the cow requires to maintain her bodily functions and as she can utilize in the production of milk. These nutrients are classified as protein, carbohydrates, and fats. Protein is one of the principal constituents of milk; fats and carbohydrates perform much the same functions, that is, produce energy and heat, and in the balancing of a ration are usually classed together. If the cow is given a ration containing an excess of either element, the excess is liable to be wasted; hence the economical importance of a balanced ration.

Corn silage, corn stover, timothy hay, millet hay, prairie hay, hays from the common grasses, straws of the various cereals, and cottonseed hulls may all be classed as low in protein

The percentage of protein in a grain mixture may be found as follows: Take any number of parts of any number of feeds in the table, and for each part put down the percentage of the column in which it is found. Add these numbers and divide the sum by the number of parts.

Examples:

1 part wheat bran	.....15
1 part cottonseed meal	.....35
1 part gluten feed	.....20

3	3) 70
---	-------

23.3 per
cent protein.

2 parts wheat bran (3x15)	45
2 parts cottonseed meal (2 x 35)	70
1 part gluten feed (1 x 20)	20

6	6) 135
---	--------

22.5 per
cent protein.

The approximate price of a ration per pound of protein may be ascertained as follows: Divide the total

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price of the mixture by the average protein content as derived above. The mixture costing the smallest price per pound of protein, other things being equal, is the most economical. Unfortunately, other things are never exactly equal, for the physiological effect of the grain, bulk, and palatability must also be taken into consideration. Practically all the grain feeds low in protein are rich in carbohydrates, but grains are used primarily for their protein content, as almost invariably the carbohydrates can be produced more cheaply in the form of corn silage, cornstalks, etc. While the above mentioned method of testing the economy of a grain ration is not entirely accurate, it is usually a safe method to follow.

HOW BIG A SILO DO I NEED?

The following table shows the number of animals that can be fed from a silo for a period of 180 days at the rate of 40 lbs. of silage per day per animal, the allowance of 40 lbs. per day being for dairy cows and stock cattle. For medium to small Jerseys allow 30 to 35 lbs. per day and about 5 lbs. per day for fattening cattle on full feed.

Dimensions	Tons Capacity	Number of Cows it will keep for 6 months 40 lbs. per day
10x20	28	7
10x22	31	8
10x24	34	9
10x26	37	10
12x20	40	11
12x22	45	12
12x24	50	13
12x26	54	14
12x28	57	15
12x30	60	16
14x22	62	17
14x24	67	19
14x 6	72	21
14x28	78	22
14x30	83	23
16x22	81	23
16x24	86	25
16x26	95	26
16x28	102	29
16x30	108	31
18x24	110	31
18x26	120	33
18x28	130	35
18x30	139	38
20x24	135	36
20x26	147	38
20x28	158	43
20x30	170	46
20x36	206	55
20x40	230	63
23x35	275	75
25x35	320	87
25x40	363	100

Corn yielding 30 to 40 bushels per acre will make about 7 or 8 tons of silage. A 50 bushel yield will make 10 tons or more. Allow about ½ acre of corn per cow on usual silage ration.

MARKETING DAIRY PRODUCTS

F. W. Merrill.

That the marketing of dairy products in Utah is a serious problem no one will deny, but the solution of the problem is not a difficult one. When there is a limited quantity of any product and added to that condition of uninform quality and uninform appearance, the market is not to blame. It all simply resolves itself into a question of quantity and quality.

A peculiar condition prevails in Utah, a condition not found anywhere else and one that makes the marketing problem a little more serious. Too

many people dairy on the one unit or independent plant. In the country towns nearly every family keeps just a few cows, the family is supplied with milk cream and butter, and quite often there is enough farm butter left to take to the grocery store and exchange for other household necessities. This condition prevails in the larger cities. One of the larger cities it is said has 700 town cows. A large pasture close to town is provided for them. It seems on the surface to be ideal but if the truth were actually known, the city people are paying a big price for their dairy products.

Large quantities of butter and cheese are shipped into the state. Quite a large amount of butter is also shipped out, and thousands of dollars are wasted annually in the handling of farm butter, all because we have done nothing to remedy the market conditions.

Marketing is largely a local problem, conditions are different in each locality. Many communities ought to have local creameries and many others must develop considerably before it would be advisable to build creameries. In order for a local creamery to succeed there should be at least 800 cows (of the Utah kind) furnishing the product, and then the product must be of high grade of uniform quality before a market can be obtained.

The plans of the Utah Dairy Loan Association do not provide for any work along marketing lines. It is intended that the local communities shall solve that problem for themselves, and loans for purchase of dairy cattle will receive first consideration if the market conditions are being looked after by the citizens of the community.

Questions and Answers

Bluff, Utah.

Utah Farmer:

Gentlemen:—I desire to plant alfalfa on a forty acre patch of land that is almost level, having only slight fall for drainage. How can I best guard against alkali raising? (None being present as yet on this new land). Do you advise sowing timothy with the alfalfa and is it advisable to irrigate it by the flooding or lever method?

Also, would you recommend fall seeding of alfalfa for this altitude of 7500 feet above sea level?

Thanking you for your appreciation.
H. H. Redd.

Answered by F. S. Harris.

It is difficult to tell you how to guard against alkali without knowing more about the topography of the land around your piece, since each piece of land presents special problems. The main thing is to prevent the land's becoming water-logged by the use of too much irrigation water on higher land. Another precaution is to cultivate the alfalfa in the spring and after each cutting to reduce evaporation. Alkali rises to the surface with the water that comes up by capillarity and is evaporated from the surface.

As a rule, better results are obtained with alfalfa alone rather than with grass such as timothy. The method of irrigating varies considerably; usually flooding is used with small guide furrows.

In most parts of the state, alfalfa does better when planted in the spring than when planted in the fall; but fall planting does real well in some localities.



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One of the best ways to improve the herd is to have a purebred bull but have a good one, there are scrubs, so to speak, among the purebreds.

How many farm tools are left in the fields to be weather beaten. Machinery when it has reasonable care will last a long time but it is expensive to have it out in the sun and rain. It is economy, therefore, to keep them under cover, and see they are oiled and painted.

The young man or woman who fails to embrace the opportunity offered by our educational institutions may be unwillingly putting aside the one thing necessary to secure a position sufficiently in advance of the average to insure success instead of mediocrity or perhaps failure. Utah has some splendid school, not one but many, they should be filled to capacity.

Years ago, when there was free range, and practically no expense, one could produce an inferior grade of livestock, and whatever he got

out of it was profit. Today this is quite different. When labor, land, and feeding are a part of production, quality becomes more essential to profitable livestock farming than ever before. The "Scrub" costs more to produce, and the markets discriminate against them.

A number of experiments have been conducted at experiment stations and all of them go to prove that it costs more to produce a scrub animal than the pure bred. Whether the livestock are cattle, hogs, sheep or horses, the good ones are appreciated when sold, and consequently bring higher prices and better returns. The most economical way to improve your herd is to use only purebred sires of good quality.

RAISE SOME GOOD HORSES

With all the buying of autos and tractors by the farmers there is still a good market for horses of the right kind. There seems to be a steady demand for good drafters. For ten years according to the records of the Chicago horse market the prices has been steadily advancing. While prices have increased we must not overlook the fact that the horse buyer is discriminating against inferior horses. The desirable farm horse is also a good horse for the market. Increase the quality and you are very sure of a better price.

TAXATION PROBLEMS.

In this issue of the Utah Farmer appears another article on the question of a reform for our tax laws. The question is, shall we vote for the tax amendment next November.

Those of our readers who would like to discuss this, and care to answer any of the articles appearing in the paper will be given space, because we want our subscribers to have a very definite knowledge and understanding of this important question before the November election.

About the time we receive our tax notices we begin to think and discuss the tax situation. Why not take hold of the question now, and at the coming session of our legislature, once and for all time settle the question if it is possible, of how to equalize the tax burdens, and put them beyond the reach of anyone to manipulate them to the hurt of one person and the benefit of another.

THE VALUE OF FAIRS.

Since our last issue we learn of a number of fairs to be held in different parts of the state. Some of them are small but all the more reason why they should have our support—by attending and helping to furnish the exhibits.

The best of the farm should be on exhibition—if you have produced some good vegetables, fruits, grains or livestock, do not be afraid to show them.

These fairs are a splendid place in which the boys and girls clubs should take part. Let them show other boys and girls what they are doing, let the leader teach a lesson to parents and public what is being accomplished in their work.

The very fact that a fair is being held in your town or county is like an advertisement showing that you are awake, doing things.

These small fairs do much for the uplift of agriculture. They encourage the producing of better crops, better and more live stock, better home life. Attend these fairs also the state fair it will be time profitably expended. Take the family along with you.

THE FARM LOAN ACT

We are pleased to note the interest being taken in the farm loan act. This rural credits law was enacted for the benefit of the farmer but he must take the initiative in working out the details.

There are two systems under which this law will work one operating through regional land banks, the other a system operating through joint-stock land banks.

If your town or community is interested in this method of securing long time money at 6 per cent we suggest you get a copy of the new law and make a careful study of it. The system may not be in working order for several months but there is no reason why you should not be ready by the time the Federal Banks are prepared to do business. The first to come will be the first to be served. Take the matter up now and make a careful study of it. If there are any questions you do not understand write to the Utah Farmer and we will try and see you get the desired information.

READING THE ADVERTISEMENTS

Years ago advertisements were run for long periods without a change; today this is different. Advertising is news, and advertisements are read as a matter of business—they are read to get ideas as to how one can save on household or farm expenses.

If a farmer is going to buy a new plow, auto, or any other machinery, he will read the advertisements in order to get the best information. He wants to know all about the very latest improvements; this shows good judgment on his part. Manufacturers and dealers know that this is the modern way of doing business, so they advertise their products. Of course, they pay money for these advertisements, but their increased sales reduce this cost to a minimum.

To protect our readers we are very careful to see that only reliable advertisements appear in our paper; for this reason you can place confidence in them, and you will get a square deal if you buy goods that are advertised in the Utah Farmer.

EXPENSIVE TO CHANGE LAND TITLE.

With the coming of the rural credit banks there will be occasion to check up the title to a great deal of land. The farmer who wants to make a loan will have to have his title checked up, and many farmers who now have loans, and are paying a high rate of interest, will want to make a loan from the new federal bank, and his title must be checked up to satisfy the government officials.

It seems to us that right now is the time when we should make a change in our system, and adopt the Torrens method of registering and insuring land titles. This method is simple and inexpensive, and could be adopted by all the states.

Of course, the abstractor and the lawyer, who are now making hundreds of dollars annually checking up the titles of land every time a real estate deal is made, will be against any thing that will interfere with their pocketbook.

A better system of transferring land titles is needed, and the sooner a law is passed that will help the present conditions, the better it will be for the farmers and the land owners who are called upon to pay the examining fees. Such a law should be passed at the coming legislature.

FIELD SELECTION OF CORN, POTATOES, AND FORAGE CROPS FOR SEED

(Continued from page 3)

ankerous, scabby wounds; and brownings inside the tuber are disease symptoms to be selected against.

Good Hills

Some times varieties deteriorate, or "run out." This need not happen if proper selection is practiced. There is a tendency to use or sell the marketable potatoes, thus leaving the small ones for seed. It has been found that potato hills vary a great deal not only in the number of potatoes they produce, but also in the kind. Some hills have from four to eight tubers of very much the same size and shape containing no very large ones and not many small ones; others have one large potato and a number of small ones; while still others consist almost entirely of small tubers. Since both very large and very small potatoes are undesirable on the market, hills with a fair number of medium-sized tubers are most desirable.

A set from any potato in the hill tends to produce a hill like the parent hill. A big potato from a poor hill is of such good seed as a smaller one from a good hill. It seems that any potato in a hill is as good for seed as any other, and if such is true there is no objection to using the small potatoes from desirable hills. If, however, small tubers from a bin or pit are used, most of them will likely be from poor hills.

Selection

Seed selection is so simple that every one who grows potatoes can follow it successfully. Only hills that have no advantage in extra room, in more food, or in better moisture ought to be considered. To select only from hill stands is advisable. With a digging fork the grower may take out each hill separately, piling them apart. Now he should carefully examine the piles, select those that contain the type desired in a high-yielding hill. For more technical work, some may desire to study the plants all summer. When such is the case, a dog may be driven close to the hills at promise well.

Storage

Selected seed requires careful storage, and protection from frost and heat. The wise farmer will store in cool, well ventilated cellar. Boxes or crates holding from forty to twenty pounds are convenient, since this method prevents decay of any one tuber, and permits easier handling. Let the boxes or small bins, if they are used, be kept over damp ground and watched throughout. Just before planting, it may be wise to expose well kept tubers to the light for a few days until green sprouts show the eyes. The green sprouts that grow when the storage place is too warm sap the strength of the seed, but are useless because they break off in planting.

Example of Potato Improvement The following by Professor William Hart, Potato Specialist of the United States Department of Agriculture on page 7 of Farmers' Bulletin No. 533 is worth notice:

"Comparatively little attention has been given to the subject of the productiveness or unproductiveness of certain strains of plants within a variety. It is believed that this is a very important factor in the production of large yields, as in any variety, studied closely, many unproductive

plants may be found. This assumption is amply substantiated in the results secured from investigations undertaken by the Office of Horticultural Investigations and Arlington Experimental Farm during the seasons of 1911 and 1912. During the season of 1911 certain selections were made from strong and weak plants which were being grown on the tuber-unit basis. A record was made of the number and weight of the large and small tubers in each selection, and from these five of the best were selected for planting in 1912. The results obtained in 1912 fully corroborate those in 1911, and the accompanying data give the average yields from the strong and weak plants of the 12 varieties studied:

Strong tuber units—3.28 pounds of primes; 1.18 pounds of culls. Total, 4.46 pounds.

Weak tuber units—0.20 pounds of primes; 0.51 pounds of culls. Total, 0.71 pound.

The strong plant gave over sixteen times as large a yield of primes, or merchantable tubers, and only a little over twice as many culls as did the weak plants. The proportion of small tubers would, without doubt, have been materially reduced if the vitality of the low yielding plants had not been so weakened that in many instances no tubers were produced. These weakened plants were in many cases affected by the disease described by W. A. Orton as the 'curly dwarf'. This is a hereditary physiological disease which, as shown by these experiments, can be eliminated by the method of tuber-unit selection."

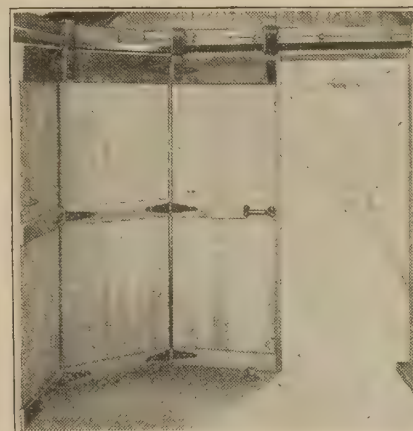
Forage Crops

With such crops as alfalfa and the grasses, it is highly important that the seed patches be kept clean. In most cases the actual number of weed plants that occur in the fields is not large. They bear so many seeds, however, that a relatively few weed plants often mean a relatively large number of their seed. The fields should be harrowed in fall or spring—perhaps both—to kill the weeds just as they start growth. Then as the season advances, some grubbing or hoeing and hand pulling will clean the fields. Larger yields and better prices for clean seed usually more than pay for this extra labor.

Dockage for impurities is always greater than enough to pay the cost of cleaning, where cleaning is possible. Where it is not, prices are hurt materially if the foreign substances are counted undesirable whether justly or not. Recently Utah has lost markets altogether on account of not being able to furnish large quantities of clean seed true to variety.

Some seedsmen fear that the alfalfa weevil is carried in alfalfa seed, and as a result have refused to buy Utah grown alfalfa seed. Dr. E. G. Titus, entomologist for the State Experiment Station, has shown, however, that this is not only unlikely but impossible. Besides, since the method of control worked out by Dr. Titus and his assistants has been practiced many of the best yields of alfalfa in Utah have been grown in weevil infested districts. On this account the pest is not dreaded nearly so much as it was a few years ago.

When purchasing seed of forage crops, particularly of alfalfa or clover, the farmer should examine the sample. A close look may show him the presence of so many weed seeds that he will hesitate to buy once he sees what



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it contains. Just lately a patch of ed. The patch must be resown. This young alfalfa came to notice where was on one of the good farms of Cache Valley. We must not be caught off our guard.

BUDDING AND GRAFTING

W. H. Lawrence, Arizona A. C.

Since fruit trees cannot be grown from seed and secure plants true to name, it becomes necessary to propagate them vegetatively. The vegetative methods of propagation are very numerous in forms, but mainly belong to two groups, budding and grafting. I will only mention the more common forms, dwelling largely on the important facts concerning the work which are essential to good results.

Practically all plants of a woody nature, with definite zones of bark, wood and pith, propagate in this manner. In general, varieties of the same species unite most freely, than species of a genus, and lastly members of the same genera of the same natural order. The wild cherry will seldom unite with the cultivated varieties, and pears unite with apples with difficulty. Pears unite well with pears, apples with apples, etc., as well as with other kinds of plants, some of which are used for such special purposes as dwarfing, etc.

In order that each person may have a knowledge of the practice of grafting and budding, I desire to give you a few facts concerning the structure and growth of a stem and bud.

Each plant bears upon itself a vast number of buds, which contain all the parts necessary to produce a plant similar to the one upon which it is produced. A cross section of the stem shows the same to consist of the parts, (very conspicuous in one-year-old stems) pith, wood and bark. Lying between the bark and the wood, and producing both, is the cambium or growing layer of the stem. This portion is usually quite plainly visible, due to a green color.

Budding and grafting are the practices of removing portions of a plant, fitting the different parts together under such conditions, and in such a manner as to produce a union.

The common method of budding consists of making a cross cut in the bark, one-half to one inch in length; then a longitudinal slit from the cross-cut downward one to one-half inches in length, rolling back the free corners of the bark with the back of the blade knife, removing a bud from the bud stick and inserting the same into the wound, then tying the loose bark firmly in contact with the bud, using raffia or soft twine to do the tying.

Buds will usually take in about two weeks time, after which the wrapping should be cut on the side of the stem opposite the bud.

Budding is very largely done in early summer or autumn, when the bark slips freely. Growth from buds may or may not take place during the season the work of budding is done. After the buds start, the tops of the plants are removed just above the bud, allowing the new branch to receive the entire supply of food.

The forms of grafting usually employed are the bark, whip and cleft graft. All forms accomplish the same results. Bark grafting is usually practiced in large trees where cleft grafting is not desirable, due to the large diameter of the stem, while whip grafting is more commonly used on stems too small to work best when cleft grafted. Bench grafting of whole or piece roots is a modified use of the whip graft.

Stems under one-half inch are usually whip grafted. To do the work, cut the stems in two, with a straight gradual and clean slope of an inch or more in length. Cut a tongue in the center, one-half inch or so in depth. Cut the cion in a similar manner; then force the tongues together in such a position as to bring the cambium layers of both pieces in contact on one side at least. Tie and coat with grafting wax.

Cleft grafting is usually practiced on stems one inch or more in diameter. The tree or branch is cut off with a clean square cut, the stem then split with a grafting chisel, the split held open by the use of the wedge of the chisel until two cions are placed in position. The cions consist of short pieces of the current year's growth, three buds in length, sharpened to a wedge slightly narrower or one edge. In placing the cions, they are set with the upper portion leaning slightly outward, in order to insure the crossing of the cambium layers of both stock and cions. After the cions are in place, the wedge is removed, and the entire wounded surface coated with grafting wax. It is also a good practice to coat the cut end of the cion.

Bark grafting differs from cleft grafting in that the stem is not split and the cion is cut sloping on one side, with a shoulder just below the bud. The cion is forced beneath the bark, and the wounds covered with grafting wax, including the cut end of the cion.

The most serviceable grafting wax consists of resin, 5 pounds; beeswax, 1 pound; charcoal, pulverized very finely, 1/2 pound; raw linseed oil, 1 gill. Melt the resin and beeswax together over a slow fire. Stir in the charcoal slowly in order to make a smooth mixture. Then stir in the raw linseed oil. This wax will become very hard. Before cooling pour it in pans or paper boxes that have been coated with oil or grease of some form. Large quantities may be made at one time and stored until needed, as this wax may be kept indefinitely. To apply this wax, it must be melted and applied while warm. A small paint brush is the most desirable tool for making the application. A special grating pot is found most serviceable when using this wax.

Another grafting wax, and one that has been used for many years consists of resin, 4 parts by weight; beeswax, 2 parts by weight; tallow (rendered) 1 part by weight. Melt the three ingredients together over a slow fire; when melted pour the hot liquid into a pail of cold water. Spread out the wax so that it will



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cool uniformly. As soon as cool, and before it becomes brittle, remove the wax from the water, and pour until the same becomes ductile and of fine grain. This wax will keep for years. When needed for use, warm in hot water, or over a fire until soft enough to use.

ON A PARTY LINE

On a Sunday afternoon an esteemed party named Smith casually remarked something about dinner, whereat his wife wearily sighed.

"John," said she, "I am too dead tired to cook tonight. Suppose we visit one of the neighbors and take a chance on being invited to stay for dinner."

"All right," was the ready rejoinder of willing father. "How about the Browns?"

"Not on your life!" quickly replied

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mother. "The Browns are going to have pork and cabbage. I heard Mrs. Brown order it over the party telephone. The Greens ordered chicken.

Shall We Vote For The Tax Amendment

Francis W. Kirkham, Salt Lake City, Utah.

In a previous article published in this paper, two objects, for a favorable vote to the tax amendment to the Constitution of the State of Utah, were discussed. It was shown that these amendments were previously defeated by the people in the fall of 1913 through the mistaken idea that the object of the amendment was to increase the taxes, whereas the object was to equalize the taxes of the state, placing the burden where it properly belonged, and where it could be carried with the least detriment to the citizens of the state.

It was shown that, under the Constitution of our State, no reduction could be made to the taxes of any person, no matter how deserving, except in the sum of \$10.00, and that the law required every tax assessor of the state, who is placed under oath to perform his duty, and is liable under the law for neglect of duty, to assess all property in the state at its full cash value. This condition of our tax laws is imposed by the Constitution of the State, and cannot be changed by legislative enactment.

Manifestly, some reduction should be made to the man with a small home, who practically consumes all he produces, as against the man who is able to save large sums of money from year to year. The great bulk of the tax of the Federal Government is paid indirectly by the ultimate consumer, and thus the man with a large family and a small income is the most heavily taxed man of the state. Let me repeat, there is no hope to relieve this man's tax burden in the State of Utah until the State Constitution is amended.

It was further pointed out that in-as-much as the law requires assessment of property at full cash value, and the same rate to apply to all property, that large intangible assets of the wealthy citizens escape taxation: Not because men who own this property are unwilling that this intangible property, such as bank deposits, notes, bonds, stocks, etc., should not be taxed, but because it is unjust and unreasonable to place as high a rate of taxation on this class of property as upon real estate, merchandise, and other tangible assets. The result is that all this vast amount of wealth in the State of Utah is not taxed at all. May I again repeat, there is no hope for a relief of this condition until the Constitution of the State of Utah be amended.

Two other objects for which the tax amendments were proposed in 1913 are as follows:—1st, the duties of the State Board of Equalization are circumscribed and limited by the Constitution. It cannot equalize the taxes of the Citizens of the State within a County. It can raise the assessed value of classes of property, as between counties but where there is unjust and unequal assessment of property within a County it only aggravates the evil for the State Board of Equalization to perform this duty. Wider and more definite powers should be granted to the State Board of Equalization. Men who could devote their entire time to this work should be employed, for, after all, the problem of taxation and justice in taxation

primarily devolves upon the administration of the law. It must be conceded that the first step of reform in taxation should be in its administration. We pay \$1500.00 a year to four men in whose hands is not only placed the taxation of our public utilities, involving millions of dollars, but the equalization of the taxation between the counties of the state. No American Business Man who, in his private life, has one hundredth part of this responsibility would think of so miserly and imprudently providing for such a responsible work. No genuine reform in the administration of the Tax Laws of the State of Utah can be made without an amendment to the Constitution.

2nd. The second, and which was the fourth main object for the proposed amendment to the constitution in 1913, related to the taxation of mining property. Under the Constitution of the State the real estate of coal and

other carboniferous ore mines must be assessed at the price paid the Government of the United States. Some of our most valuable coal mines were purchased from the Government at a very low price, from \$10.00 to \$20.00 per acre, whereas the prices demanded now by the Government for coal lands has been advanced of late years until \$300.00 is now asked for such land.

It seems so manifestly unjust to all of us, when the true condition is known, that the new coal company, struggling under heavy expense must be assessed for land at the rate of \$300.00 per acre, whereas the large, well-established, and big paying dividend mines of the state are only required to pay taxes on an assessed valuation of \$10.00 per acre. The real value of the latter land may be thousands of dollars per acre, and the real value of the former land may be less than the price demanded by the Government; but this ridiculous and unjust condition cannot be remedied unless the Constitution of the State of Utah be amended.

At the coming election one amendment only is proposed to the Constitution. This amendment will give the Legislature the power to enact such

laws as will remedy these four main defects in our Constitutional Law and make possible other necessary laws.

—o—

AND THEN HE SAT DOWN.

"I think that children are not so observing as they used to be," said a member of the School Board to a teacher whose class he was visiting

"I hadn't noticed it," replied the teacher.

"Well, I'll prove it to you," answered the committeeman. Turning to the class, he said:

"Some one give me a number."

"Thirty-seven," said a little girl eagerly.

He wrote "73" on the board. Nothing was said.

"Well, some one else give me a number."

"Fifty-seven," said another child.

He wrote "75" on the board, and smiled knowingly at the teacher when nothing was said. He called for a third number and fairly gasped at the indignation manifested by a small red-faced urchin, who said: "Seventy-seven, and see if you can change that."

—Ladies' Home Journal.

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32x3 1/2 in.	12.75	38x4 1/2 in.	22.50
32x4 in.	15.75	38x4 3/4 in.	23.60
34x4 in.	16.70	38x5 in.	26.50

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When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

HOME

SEASONABLE RECIPES Mustard Pickles.

Wash pickles, place in an earthen jar, and cover with a dressing made as follows—Mix one gallon of vinegar, one cup of salt, one cup of sugar, and three-fourths of a cup of dry mustard. Cover and set in a cool place. They use within a week after making.

Corn Chowder.

A can of corn, or boiled corn cut from the cob, 4 c. potatoes cut in 1/4 inch slices, 1 1/2 inch cube fat salt pork, 1 sliced onion, 6 common crackers, 3 tbsp. butter, salt and pepper. Cut pork in small pieces and try out. Add onion and cook 5 minutes, stirring often that onion may not burn. Strain fat into a stew pan. Parboil potatoes 5 minutes in boiling water to cover. Drain and add potatoes to fat. Then add 2 c. boiling water, cook until potatoes are soft, add corn and milk, then heat to boiling point. Season with salt and pepper, add butter, and crackers split and soaked in enough cold milk to moisten. Remove crackers, turn chowder into a tureen and put crackers on top.

Olive Oil Pickles

1 gallon of sliced, but unpeeled, cucumbers, 1/2 cup of salt, 1 oz. of white mustard seed, 1 oz. of black mustard seed, 1 oz. of celery seed, 2 large onions chopped fine, 1/2 pint of olive oil.

Arrange cucumbers and salt in layers, let stand three hours or longer, then drain. In an earthen jar place a layer of cucumbers, one of onions, sprinkle with seasonings, then add two tablespoons of olive oil, and repeat until all the ingredients are used. Add the remainder of the oil and cover with cold vinegar. Cover and set in a cool place.

Fried Summer Squash.

If it is the crookneck variety, wash and cut in slices almost an inch thick, cook slowly until tender, which will be in about half an hour, having the water salted. Rapid boiling cooks things to pieces, and we wish to keep the squash in good shape. The seeds are not taken out, for the squash should be used while both seeds and skin are very tender. When it is done, remove from the fire and lay slices in a colander to drain a little. Have ready a skillet with very hot butter in it, dip slices of squash in beaten whites of egg and then in browned bread crumbs, or simply dip them in flour and fry a delicate brown in the hot butter.

Easy Cucumber Pickles.

To one gallon of vinegar add one cup of salt, one of mustard, and one of sugar. Wash medium sized cucumbers never the small gherkins, and throw into this mixture. No cooking is required, and the pickles will keep without sealing for a year; but the addition of a horseradish root will improve them and add to their keeping qualities. This pickle has various names. It is sometimes called "lazy wife pickle." Leaving out the sugar and horseradish, it is called "mustard pickle" by humble people who have not porcelain kettles for cooking nor sealed containers for keeping pickles.

Pickled Onions.

Select sound, small onions of equal size; peel and scald in salt water until they are tender; then drain and



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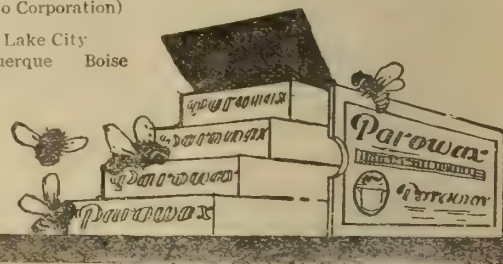
Parowax, the purest form of paraffine is guaranteed under the Pure Food and Drugs Act. It is sold by reliable dealers in one pound cartons.

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put them into glass jars. Heat to the boiling point, sufficient vinegar to cover them, scalding with it mixed whole cloves and mace. Pour the vinegar over the onions, distributing the spices among the jars; seal the jars airtight.

Pickled Celery.

The orientals pour cold vinegar over a great number of single things, or combinations of fruits or vegetables to make a pickle or "tourshou." The following recipe from the source has been tried: Wash and cut stalks of celery into two inch long pieces add salt or other seasoning to taste with a crushed clove or two, if you choose, of garlic. Cover with vinegar and then with a tight cover. In two or three days this is ready to use. Green peppers, pierced, seasoned with salt, are treated the same way and ready as soon, or they may be stuffed. Green tomatoes are treated the same as green peppers. Onions, garlic, cooked vegetables like carrot, etc., are treated in the same way.

Cucumber and Onion Pickles.

Take one hundred very small cucumbers, put them in a stone crock, and as you put them in, layer by layer, salt them well. Next day rub them with a cloth until nice and clean and throw the salt water away. Take one quart of good vinegar—if very strong put some water in—and boil, then pour boiling vinegar over the cucumbers and let stand over night. Next day pour off vinegar, boil, and pour over the cucumbers. Let stand again over night. The third day have some small onions peeled. Pour vinegar off, let boil, put in the crock one layer of cucumbers, one of onions. Pour boiling vinegar over all. When cold, cover tight, let stand a few days and they are ready for use. If done this way they will keep good and crisp

all winter. If you like it you can put a little dill on top.

BAKING POINTERS

Addie D. Root.

Bread is one of the simplest of our cooked foods, but making it involves some very complicated processes which will give better results if thoroughly understood by the housekeeper. The first essentials are perfectly clean vessels and good strong yeast. No particular kind of yeast ever kind is used should be tested is better than any other, but what to see that it is not too old to give good results. It contains little plants which grow and give off gas, thus causing the bread to rise. In old yeast most of these plants are dead so it is best to see whether it is live enough to form bubbles or foam in a few minutes after yeast has been added to sugar and luke warm water.

In mixing the dough if the flour is added gradually and thoroughly beaten into the liquid it will carry in enough air to make the yeast plants grow, for air is almost as necessary to them as it is to animals. If the dough is made too stiff, harsh, dry, crumbly bread will result, so as little flour as possible should be used, but enough must be used so that the dough will not be sticky.

In kneading use a quick, even stroke and be sure that the yeast plants reach every part of the bread in order that it may have a good even texture. Never knead bread over thirty minutes, as too long kneading will destroy the elasticity of the dough. After fifteen or twenty minutes the surface will usually be smooth and velvety and gas bubbles will begin to appear, indicating that kneading has been continued long enough.

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92½ acres adjoining the railroad station and on the state highway. Five acres of water. Balance of the farm is level and easy to irrigate. Water can be had for the whole place. No incumbrances. Will consider exchange for Salt Lake City property or sell on exceptionally easy terms.

We have one of the most modern farms in Utah for sale. Was sold one year ago for \$20,000. The man is desirous and moving to California and has instructed us to sell for \$9,500. Will exchange for California property.

We have some very excellent farms for sale in southern Idaho on easy terms and low rate of interest.

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ABSOLUTELY PURE

Set the bread to rise in a clean bowl covered tightly. If the temperature is kept between 80 and 95 degrees F. it will not be necessary to oil or moisten the surface to keep a crust from forming. If the dough is kept too warm while rising it will become soft and runny, too much gas will be formed, bacteria will grow, and the bread is likely to be dark, coarse, and sour. Chilling will not stop the growth of yeast and formation of gas, but is likely to cause an undesirable crust to form over the dough. When the dough has risen in a warm, even temperature to about twice its first bulk and been properly worked, there should be little danger of souring.

The oven should be just hot enough to stop the dough from rising in the pans, after it is put in to bake, but should not be too hot at first. If a thermometer is used, start the bread in an oven at 360 degrees F., and increase the heat gradually for fifteen minutes but lower it again after about 30 minutes. The bread should begin to turn brown in patches during the first fifteen minutes and should have an even brown surface at the end of half an hour.

If the dough has not risen to twice its original bulk it may be started in a collar oven and allowed to continue to raise during the first ten minutes of baking.

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EDUCATION WHICH EDUCATES

Our dictionary says that education is "the systematic development and cultivation of the normal powers of the intellect, feeling and conduct, so as to render them efficient in some particular form of living." The great bulk of the boys and the girls who are born and raised on our farms spend the rest of their lives there; farming is their "particular form of living." Then if their normal powers of intellect, feeling and conduct are not trained so as to render them efficient in farming, they are not educated.

Too much of our school money is spent in storing the minds of our children with information which does not render them efficient in any form of living whatever; especially does it not make them efficient farmers. Too little of it is spent in training them to be successful business farmers. And far too much of it is absolutely wasted, if not worse.

Some will say in reply to that statement that the proper function of a school is to train the mental faculties of the children—increase their capacity to think and to reason—and to give them culture rather than useful information. We agree that the proper function of a school is to increase the capacity of the child to think and to reason, also that it is to give the child culture. But we maintain that there is just as much mental gymnastics and training in figuring out how many bushels of corn will be gathered from an acre of ground containing a certain number of stalks, each bearing an ear a given weight, as there is in figuring out how many yards of cloth there are in a bolt of certain dimensions in inches or feet. We maintain that there is even more real culture in knowing how a seed sprouts and develops a plant which bears fruit of some sort than there is in knowing how a Latin verb is conjugated, and incidentally there is a heap more usefulness in that information.



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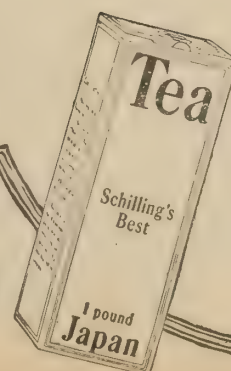
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IRRIGATE YOUR PEACHES OFTEN Maximum Amount of Irrigation Water Found.

If you want to raise good peaches, be careful how you irrigate. The Utah Agricultural College has just published a bulletin by L. D. Batchelor on the Irrigation of Peaches that draws some interesting conclusions on the subject of peach orchard irrigation.

It was found, during a series of experiments covering three years, conducted on an orchard of W. O. Knudson & Sons, Brigham, that frequent applications of irrigation applied to peaches at intervals of seven or eight days produced a more continuous and greater twig growth than the same total amount of water applied with larger applications at intervals of ten to twelve days. The more porous the soil, the more frequent the trees should be watered.

With varying times of application of irrigation water the season of most rapid twig growth is during the season of watering.

With the same total amount of water applied on a gravel loam there is a regular increase in crop production the more frequent the irrigation. Less water was evidently lost by seepage when irrigation water was applied every seven or eight days and the trees received no check in growth due to becoming excessively dry from one watering to another.

The maximum duty of irrigation water applied to peaches on a gravelly soil is 31 acre inches. Any more is wasted. Sixty-two acre inches of water applied to two acres on a gravel loam soil would apparently have produced twice the yield of marketable fruit than if applied to one acre of trees.

No amount of water applied early in the season to a crop of peaches on gravelly soil will compensate for the lack of water during the month before harvest.

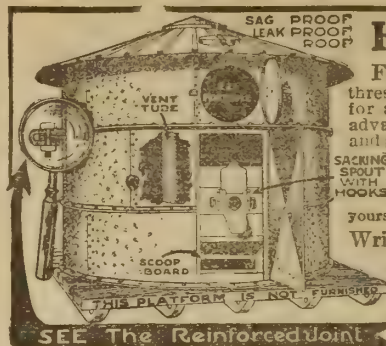
The Concrete Road and Its Construction

Manen Allen.

The concrete road is being quite extensively used, and I believe there is a great field for it; but there are many instances where, because of improper design and construction, a more or less complete failure has resulted. Concrete is a material which, if properly made, grows more durable the older it is. It would, therefore, seem excellent for use, in road building where suitable materials may be obtained of which to make it.

Opinions differ as to how this type of road should be built, and the method I shall give is one which I personally believe will give satisfaction. The sub-grade should be very heavily rolled before the concrete is put upon it, and sprinkling should be resorted to when by this method it is possible to secure greater consolidation. If there are fills, even of moderate depth, these should be allowed to settle for at least one season before the pavement is put upon them. You rightly expect a concrete road to be of very great duration, and to carry very heavy traffic. Therefore, you should take no risks when building it. The amount of traffic should determine the thickness and width, but it should in no case be less than 8 inches in thickness or sixteen feet in width. The very heavily traveled roads upon which you should use this type will, before many years, be subjected to very heavy motor-truck traffic, both passenger and freight, and if you build your pavement too thin, this class of traffic will hammer it to pieces. It may not do so for the first few years, but you do not wish to build an expensive pavement for a few years' use only. The concrete road you hope will last for very many years.

Build this type of road in two courses; but the top course should be laid upon the bottom course before the bottom course has taken its initial set. If you are constructing an eight-inch pavement, the bottom course should be six inches thick, and be composed of concrete having proportions of one part cement, three parts sand, and five parts broken stone. Gravel may be substituted for the broken stone, but the gravel should be screened, and the sizes should be the same as when stone is used. The stone should be from 1½ to 3 inches in size. The sand and cement should first be mixed dry, and the mixing should be thoroughly done. There is a tendency to do too little mixing in order to get as great a yardage mixed in a day as possible. After the sand and cement have been well mixed dry, water should be added, and the mixing proceeds until the water is thoroughly incorporated, after which the stone, which has previously been well wetted, shall be added and the mixing continued until the whole mass has been thoroughly mixed. As soon as the concrete is mixed, it shall be deposited on the sub-grade to the required thickness and well tamped. Before this bottom course has taken its initial set, the top course of two inches in thickness shall be deposited on top of it, shaped to the true crown by means of a strike board, and smoothed up by wood floats. The mixture for the top course should be one part of cement, three-fourths part of sand, and one part of stone. The



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Miller & Viele

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Salt Lake City

stone used (for which good gravel of the same size may be substituted) shall be from ½ to 1½ inches in size. The crown of the finished road should be ¼ inch to the foot.

As soon as the finished pavement has set sufficiently to permit work upon it without injury, it should be covered with canvas or loose earth, and kept wet for ten days. No traffic should be permitted upon the concrete for thirty days. I advise building the concrete road in two courses because it is necessary that the top be of a very rich mixture and it is not necessary to have so rich a mixture in the bottom.

There are several kinds of block pavement. Those most frequently used are brick and stone block, though in some locations wood blocks are used with excellent results. All of these types, to give good results, should be laid upon concrete, and all are quite expensive, ranging in price from \$3.00 to \$4.00 per square yard. As the work of building the concrete base for all block pavement is identical with that described for building the bottom course of a concrete road I shall say nothing of that part. If the top course is to be of brick or stone blocks, the bricks or blocks are laid in a bed of Portland cement mortar directly upon the concrete, and the joints are then grouted with a mixture of one part of Portland

GREEN CONCRETE MIXERS

No matter how small the job all concrete should be thoroughly mixed.

The old method of shoveling is tiresome from a physical standpoint and is very unsatisfactory for consistent mixing.

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J. C. HENAGER,
President.

cement to one part of clean sand. In the case of wood blocks, the joints are filled with fine sand or bituminous material and sand. The blocks for the style of stone block pavement that is being constructed nowadays are fine cut and laid with close joints. When constructed of blocks of this character, the stone block pavement, though very expensive, is also very durable. Wood and stone blocks have not so far been used to any great extent on rural highways.

There are several other types of pavement I have not taken up, but they are either patented types or types that are not used to any great extent for rural highways.

IT CAN'T BE DONE

How did the world get started, son? Why, some one said, "It can't be done!"

That settled it. The troglodyte Came out of darkness into light.

"It an't be done!" somebody said, And lo! the green fields gave us bread.

With the taunt ringing in his ears Has man gone upward through the years.

You should have seen the mill wheels run

When some one said, "It can't be done!"

"It can't be done!" they said before A sail put out to sea from shore.

Since world's remote and dismal drawn Those magic words have spurred us on.

It drove Columbus where the sun Went redly down, "It can't be done!"

"It can't be done!" the weakling said, And lo! the Wrights flew overhead.

"It can't be done!" was what they cried When Fulton offered them a ride.

They said it, and Marconi sent His message through the firmament.

That is the way it happened, son. Praise God for this, "It can't be done!"

—Impressions.

Save The Straw

A ton of wheat straw contains ten pounds of nitrogen, two pounds of phosphorous, and fourteen pounds of potash. These three are the main constituents of a fertilizer. Six years ago these elements were worth \$2.58. Since then they have greatly increased in price and some are difficult to obtain at any price.

The amount of wheat straw burned the United States in 1914 was 14,357,000 tons, or a total of all straw, including oat, barley, rye, and rice, of 17,613,000 tons, according to an investigation by the Bureau of Crop Estimates. This straw, in 1914, was estimated to be worth, on an average \$3.71 a ton for feeding purposes. Some of this straw being worth more than others, such as rice and oat, was not burned or wasted to such a great extent. The total value of all this straw that was burned was valued at \$56,533,760.

This is an economic waste that has no excuse. Although our soil is now fertile, the time is but a few years distant when every acre of the soil will need replenishing with some kind of a fertilizer. Where a farm is planted to small grain for twenty-five or thirty years in succession the loss of organic matter is from 32,000 to 50,000 pounds an acre. Unless some of this organic matter is replaced in some form the yielding qualities of the land will become materially lessened. The amount of manure produced on the average each year will not entirely replace this loss of fertility. It will be necessary to add commercial fertilizers just as they are doing in the Eastern states and in the foreign countries. Then why so much straw allowed to go up in smoke when it is so valuable as a fertilizer? The replacing of the straw on the land will help to keep up the fertility for several years yet.

The straw is spread on the ground and disked into the soil. This practice will not only keep the soil from blowing but will also hold the snow on the

land. Farmers who have tried this use of straw report it a most valuable asset in increasing the yield of wheat.

The feeding value of straw is an important item. This is well shown in a recent bulletin from the United States Department of Agriculture. At Hays, Kansas, also its feeding value has been demonstrated.

"To bring these straws up to their real value on the farm," says the government bulletin, "would necessitate their being fed or used as bedding for cattle and other live stock. The gain which accompanies this feeding because of increased soil fertility can hardly be calculated, but needless to say it would be enormous. Of all systems for maintaining soil fertility, none is so practical or as easily available as that of feeding live stock.

"The economical feeding of cattle necessitates the use of large amounts of roughages. Experiment stations have found no more efficient way of utilizing roughage than through cattle. Considering these factors in all their phases it seems that there is little doubt that systems of crop growing, permanent soil fertility, and cattle feeding are interdependent.

"The total production of grain straw in the United States in 1914 is estimated at about 120,000,000 tons, or an average of 1.14 tons per acre from 105,406,000 acres producing wheat, oats, barley, rye, rice, flax, and buckwheat. At an average value of \$3.71 a ton the total value of this straw would be \$446,000,000. The magnitude of the annual output of straw may be appreciated when these figures are compared with the total production of cultivated hay, which in 1914 was estimated at 70,071,000 tons. In other words, there is about one and two-thirds as much straw as cultivated hay produced in the United States. The total value of straw as given above is exceeded only by the value of such crops as corn, wheat, oats, hay, and cotton.

"Of this total production of straw it was estimated that about 55 per cent (17,613,000 tons) was burned, 8 per cent (9,212,000 tons) was plowed under or otherwise disposed of.

WANTED

Copies of Utah Farmer (Deseret Farmer) Vol. 2, Number 10-11-16-17 and 19. These numbers are wanted by the U. S. Department of Agriculture Library to complete their files. Can any one supply them? Send direct to this office.

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AGRICULTURE LESSON

(Continued from page 2)

be cut in early bloom when only from 5 to 10 per cent of its blossoms have appeared. We get then a larger yield, which contains a higher percentage of the most valuable nutrients, a larger percentage of leaves, and a greater proportion of digestible matter than if it is cut at any other time.

How to Grow it.

Lucern is not suited to all soils and climates. It appears to be best adapted to the irrigated regions of the west, where the moisture can be controlled, and where the plant gets a maximum amount of sunshine and a minimum amount of shade.

The discing of a lucern field destroys all surface rooted plants but does not injure the deep rooted lucern. The cutting and splitting of the crowns invigorates the growth and thickens the stand. The first few months of the life of lucern is its most critical period. The young plants should be cut often during the first year, not for the sake of the hay but to destroy the weeds, and to strengthen the lucern plants. The young plant is easily checked by lack of moisture and killed by frost. Before planting the land should be deeply plowed in the fall. In the spring the disc harrow should be freely used to smooth the soil and to conserve the moisture. Mulching it quite generally practised in the west, where the conservation of soil moisture is of the utmost importance. About two or three inches of the soil on top should be kept as loose as possible.

Seeding.

In the western states it is almost entirely spring sowing that is practised, May being the favorite month during which the seed is sown. The best way to sow lucern is with a press drill, covering the seed from an inch to an inch and a half in depth and pressing down the surface so as to draw up water from beneath by the action of capillary attraction. The quantity of seed to sow per acre depends upon the soil and the conditions under which the lucern is to be grown. To obtain the highest yield under arid farming conditions, six, eight or ten pounds per acre is sufficient. In irrigated districts from 15 to 20 pounds per acre may be sown to advantage.

Quick Harvesting.

In an experiment carried on at the Colorado station to determine the losses in cutting and curing lucern, the following results were secured:

Lucern left out 15 days after cutting, lost 27 per cent; lucern left out one week, lost 10 per cent; lucern raked the same day as cut and hauled to the barn the next day, lost only 5 per cent of its weight.

As a Beef Producer.

The average annual beef product from an acre of lucern is 706.6 pounds. To produce an equal weight of beef from other kinds of hay would require 9,575 pounds of timothy, 11,967 pounds of red clover, and 10,083 pounds of corn fodder. The Kansas station claims that cattle can be fattened 50 per cent cheaper by the use of lucern than by that of other fodders. It also produces milk cheaper than any other cow food. Lucern is considered as excellent food for horses, cattle, sheep, pigs, and poultry. There are two kinds of lucern—common and Turkestan. The latter was brought from Asia a few years ago by the United States department of agriculture. It is claimed to be better than the common kind.

Clover, peas, beans and many other leguminous plants are grown in our state, but the crop just discussed is by far the most important.

Best Nitrogen Collectors.

Lucern, cowpeas, sweet clover, soy beans, red and alsike clover are the best of the nitrogen collectors.

Nitrogen is the most important food of plants, because it is the most difficult for them to get and the most expensive for man to supply. It exists free in the atmosphere, and hence in the soil, which normally contains a good deal of air. But soil nitrogen cannot be used by plants until it is changed to the form of nitrate nitrogen by the nitrifying bacteria.

Atmospheric nitrogen cannot be used by any agricultural plants, excepting legumes, and even leguminous plants have no power to obtain nitrogen from the air unless their roots are provided with the proper nitrogen-gathering bacteria.

The Plants Food.

Among the 10 essential elements of plant food, carbon has no commercial value because plants get it free from the air, and the hydrogen and oxygen from soil water. Calcium, magnesium, iron and sulphur are always sufficiently abundant in soils for plant growth. But nitrogen phosphorus, and potassium being present in limited amounts while required by plants in considerable quantities, have market values and are sold as fertilizers.

Monroe, Utah.

Dear Mr. Editor—I would like to have your opinion, what would be the best kind of grass to sow for sheep pasture on light soil, that has to be irrigated and what time would be the best time to sow it, in the spring or in the fall? Please answer through the Utah Farmer.

Yours truly,

Charles Barney.

Answered by F. S. Harris

The following mixture of grasses should make a good pasture for a light soil under irrigation.

Kentucky blue grass.....	8 pounds
Meadow fescue	12 pounds
Fall Meadow oat grass.....	5 pounds
Bromus inermis.....	8 pounds
White clover.....	2 pounds

The weights are in pounds of seed to the acre of land. The seed can be planted either in the fall or spring but spring planting would probably be better for your conditions.

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APPRECIATING THE COMMONPLACE

L. H. Bailey.

If a person has given any serious thought to public questions, he has his own contribution to make as to the causes of present conditions and the means of bettering them; so I make mine: what is now much needed in the public temper is such a change of attitude as will make us to see and appreciate the commonplace and the spontaneous, and to have the desire to maintain and express our youthful and native enthusiasms. And it is my special part to try, so far as possible, to open the eyes and the heart to nature and the common-day environment. My point of view is, of course, that of the countryman, and no doubt it has the countryman's bias.

So great has been the extension of knowledge, and so many the physical appliances that multiply our capabilities, that we are verily burdened with riches. We are so eager to enter all the strange and ambitious avenues that open before us that we overlook the soil at our feet. We live in an age of superlatives, I had almost said of super-superlatives, so much so that even the superlatives now begin to pall. The reach for something new has become so much a part of our lives that we cease to recognize the fact and accept novelty as a matter of course. If we shall fail to satisfy ourselves with the new, the strange, and the eccentric, perhaps we shall find ourselves returning to the old commonplace and the familiar, and perhaps we shall be able to extract new delights from them because of the flights we have taken. Perhaps in their turn the commonplaces will be again the superlatives, and we shall be content with the things that come naturally and in due order. Certain it is that every sensitive soul feels

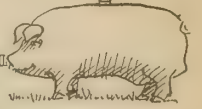


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last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again.

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The cows are not culls but are richly bred and of good dairy type. They all have daily records of milk production.

Write for particulars or call and make your own selections. **Richmond CAINE LIVESTOCK COMPANY** Utah

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this longing for something simple and elemental in the midst of the voluminous and intricate, something free and natural that shall lie close to the heart and really satisfy our best desires.

It is not likely that we shall greatly simplify our outward physical and business affairs. Probably it is not desirable that we should do so, for we must maintain our executive efficiency. We have seen a marvelous development of affairs, expressed in the renovation of a hundred old occupations and the creation of a thousand new ones. Most of these occupations and businesses are clear gain to the world, and we may expect them to endure. This rise of affairs has em-

phasized the contrasts of business and of home. Machinery and complexity belong to affairs: but a simpler and directer mental attitude should belong to our personal and private hours. Perhaps our greatest specific need is a wholesome return to nature in our moments of leisure—all the more important now that the moments of leisure are so few. This return to nature is by means of cure-alls for the ills of civilization, but it is one of the means of restoring the proper balance and proportion in our lives. It stands for the antithesis of acting and imitation, for a certain pause and repose, for a kind of spiritual temper, for the development of the inner life as contrasted with the externals.

You can be independent on your own Irrigated Farm at Downey, Marsh Valley, Idaho

"The Land of Opportunities"

Located on the main line of the Oregon Short Line, 95 miles north of Ogden and 40 miles south of Pocatello.

Climate

The climate is similar to that of Cache Valley, which immediately adjoins Marsh Valley on the south. There are no extremes of temperature.

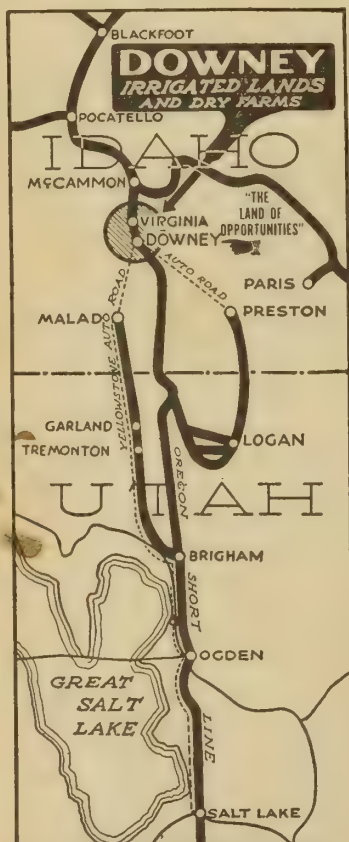
Soil

The soil is a rich sandy loam, which in its natural state is covered with a heavy growth of black sage. This type of soil has been proven to be equal of any in the world for fertility.

Markets

Stock, grain and produce are shipped to Utah, Montana and Pacific Coast points. The local demand is greater than the supply. There are no better markets any place in the country than those tributary to Downey.

Study this Map



Main Canal Near Downey

This man knows

J. A. Fitts, who has successfully farmed near Downey for six years, says, "Any man who will work on his farm in this valley is bound to succeed. There is no better land, no better railroad, no better water, both for domestic use and for irrigating, in the country. The soil is rich and the climate almost ideal. Potatoes will bring over \$100 per acre and from 40 to 50 bushels of wheat to the acre is a common crop. Last year I raised 35 car loads of fine potatoes on 100 acres of virgin land, or about 250 bushels per acre. There is no better farming country anywhere in America than the irrigated land near Downey."

Irrigating Water

An abundance of irrigating water is furnished through the big canal from the fine modern reservoir on the Portneuff river. The main canal is 30 feet wide, 4½ feet deep and 26 miles long.

Culinary Water

The culinary water, found at a depth of 10 to 35 feet from the surface, is of a very superior quality and in great abundance.

Why You Should Buy Now

A sugar factory will soon be built near Downey. By getting in TODAY you will be buying at "ground floor" prices. The Downey and Marsh Valley country is growing rapidly. Prices will never be so low again.

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\$60 to \$100 An Acre

including a full water supply from the big Canal system, is the average price of the best irrigated farming lands. Most of the farms are in 40-acre units. In the main they are fully developed farms with alfalfa, grain and garden products now growing.

Terms

The first payment on a 40-acre farm is from \$200 up. The balance can be paid in 10 equal yearly payments. Interest at only 6 per cent on the unpaid balance. Dry farms \$35 to \$65 an acre.

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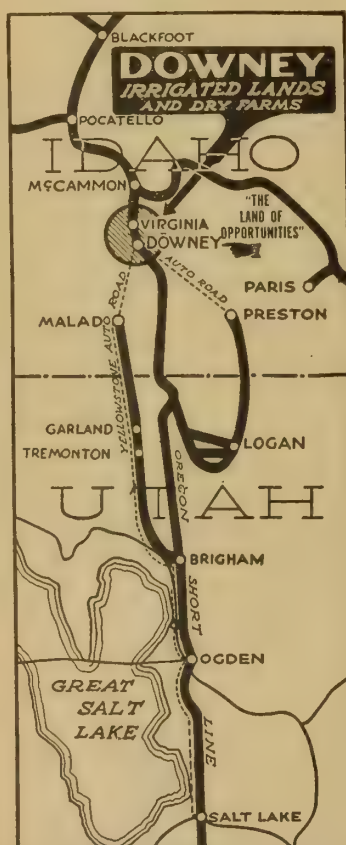
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Salt Lake City, Utah

Rainfall In Relation to Dry-Farming

Geo. Stewart, Instructor in Agronomy Utah Agricultural College.

It is a well-known fact that some regions are drier than others, that when plants wilt they do so because the supply of moisture is insufficient, and that plants grow rapidly after a rainstorm heavy enough to moisten the soil to any considerable depth. Just what is the value of rainfall in definite terms such as tons of hay or bushels of wheat can not be generally known with exactness.

Amount of Rainfall.

One region is rainy or wet, and another one is dry in proportion to the amount of rainfall, which consists of rain, hail, snow, and sleet. Unless the amount of water that falls in a section is stated in definite terms, it is impossible to tell just how much rainfall the region actually has. For convenience, rainfall is reported in inches of water. If all of the moisture that falls in a year could be saved in such a way that no loss took place, the depth in inches might be measured at the end of the year and reported. Where a part of the rainfall is snow, hail, or sleet, these must necessarily be melted and the depth of the water taken. Because the snow of some storms is much wetter than that of others, the depth of snowfall can not be taken. Since it is impossible to save the rainfall and measure it all at once, carefully devised vessels catch each storm for separate measurement. These are added to give the total precipitation for the year.

A region is said to be humid when ordinarily there is enough rainfall to produce crops without irrigation water. Regions that have too little rainfall for crop production without the practice of either irrigation or dry-farming, are said to be arid. Transitional regions, that is, those that lie between, are called sub-humid or semi-arid regions. Sometimes these terms have slightly different meanings, but not usually. With ordinary soil and winds, thirty inches of rainfall during the year is usually enough to enable successful farming without special culture methods. Less than twenty inches is commonly taken as the amount of rainfall that requires irrigation or special tillage methods. Where there is between twenty and thirty inches, crops need more care than is given in a humid region, but not so much as in an arid section.

Distribution of Rainfall.

More than half of the land area of the earth has too little rainfall for the most profitable agriculture. The most extensive areas of aridity are North and South Africa, Australia, except the northern coast, Central Asia, southwest Asia and southeast Europe, and western parts of both Americas. In the United States the dry areas, beginning about middle Kansas and

Nebraska, extend westward to the coast except the western strip of Washington, Oregon, and northern California. The dry regions result from such a combination of winds, latitude, oceans, and mountains that cause the rainfall to be scant or the evaporation to be high.

Some districts have storms throughout the year, at nearly regular intervals, while others have alternate periods of wet and dry weather. In California, for example, the rainfall comes almost entirely during the winter; in Utah, Nevada, and southern Idaho rather largely during the later winter and early spring; in Arizona during July and August; in Montana and Wyoming largely during late spring and early summer; and on the Great Plains during June and July.

Where most of the precipitation falls in the growing season, plants make ready use of it, but where it falls before the crops are planted, or at least begin to grow rapidly, much of it may be lost before the time of greatest need. Evaporation is high, however, when the moisture falls largely in warm weather. Clear, dry harvest weather is also a decided help.

If the rainfall is slow or in the form of snow, opportunity is afforded for it to sink into the soil. Heavy downpours, by compacting the surface soil and by emptying considerable quantities of water on the soil at once, encourage much run-off. Slow, drizzling rains are therefore preferable to sudden, torrential rains.

Small summer showers wet only the surface and are evaporated before they come in contact with the active roots. Larger storms are more efficient; it is better even to have the rainfall of dry regions all in one season of the year than well distributed in small storms.

Crop Yields.

Some seasons are much more favorable to crops than others. Often much of this difference is due to a difference in rainfall. One year in Illinois, 13½ inches of rainfall during the growing season produced 32 bushels of corn to the acre. The next year under similar conditions, save that 22½ inches of water fell in the growing season, 94 bushels were grown on each acre.

Careful investigations have shown that large part of any crop grown under irrigation is produced by the natural rainfall. About 750 pounds of water are used in western America for growing one pound of dry substance in the wheat plant. Counting one-half of this to be straw, each inch of water on an acre will produce about 2½ bushels of grain, if no water is wasted. A ten-inch precipitation could supply a 25 bushel crop with

moisture till maturity. Where there is a rainfall of twenty inches, large crops can be grown without irrigation. Widdsoe (Principles of Irrigation Practice, p. 234) has estimated that under a light irrigation of 7½ inches, from 67 to 84 per cent of the yields resulted from rainfall, and only 16 to 33 per cent from irrigation water.

Evaporation

Plants use only that part of the soil moisture which does not evaporate or drain off beneath. In deep soils of dry sections, loss from percolation may be practically forgotten so far as rainfall is concerned. Evaporation is, however, extremely active. It is so intense that from two to ten times the total rainfall will evaporate from a water surface and twice this much from a constantly wet soil. A person cannot but wonder how any water at all is left in the soil. Indeed, it is little the plant will get unless great care is taken to prevent losses by evaporation. The drier the air, the hotter the soil, and the freer the wind movement, the greater will be the evaporation.

Winds.

If high, warm winds are common, they pump immense quantities of water from both the soil and the plant. The damp atmosphere immediately above plants replaced by dry air which is thirsty for water. Only by getting the moisture deep into the soil and by making a protective mulch on the surface, can it be saved at all under such conditions.

A great difficulty is that it is regions with little rainfall that have hot, clear weather, warm winds, and dry air. As the available moisture in a farming section gets less and less, the difficulty as well as the importance of saving it become greater and greater.

Soils composed of particles that are nearly of the same size and that are neither too coarse or too fine, permit water to move back and forth readily. Seams of gravel or hardpan, however, prevent this movement and are, therefore, undesirable. Because they are not uniform such soils are nearly useless for dry-farm purposes. To be effective as crop producers, the soils of dry regions ought to be six, eight, or more feet in depth without gravel or hardpan of either clay or cemented materials. For agricultural purposes, a soil has no more depth than that to which roots can be readily or from which water can rise freely to the feeding roots.

Root Systems.

In wet soils or in soils with a hardpan near the surface, plant roots do not penetrate more than two or three feet. In dry-farm areas on uniformly deep soils, wheat roots have been found more than seven feet long and

alfalfa roots more than twenty feet. Nebraska workers found, that soils lose water from as much as fifteen feet below the surface in the case of grass crops. Water is drawn from some distance below the deepest roots. Many of our dry-farm crops have developed extensive root-systems that enable them to feed many feet below the surface, far from the place where evaporation is active. A good loam soil ten feet deep can hold twenty-five inches of water—enough to supply an enormous crop of grain or a good one of hay. Dry-farm tillage methods, which retain this water for plants, are the only necessities for a paying crop, if the soil is once thoroughly moistened.

Dry-farming Extensively Practiced.

"Dry-farming" is the name given that kind of farming in which there is special tillage to prevent evaporation. Until the last few years, dry sections were carefully avoided by home-seekers, and wisely so. Investigations in Utah and California, and on the Great Plains, however, recently proved that it possible to produce crops where care was taken to handle the soil properly and to choose crops that were drought-resistant. At present, dry-farming is practiced, not only in western United States, but in Mexico, western Canada, South America, North Africa, South Africa, Australia, India, China, Asia Minor, Russia, Austria Hungary, Spain, and other countries. The people of these countries are just finding out the possibilities of crop production under methods of water conservation.

Fundamental Principles of Dry-farming

The successful practice of dry-farming is based on a few fundamental principles, among which are:

1. Crops require a more or less definite amount of water for successful growth.
2. Some plants use water more economically than others, and are, therefore, better adapted to the dry-farm.
3. All rainfall should be made to pass at once into the soil and be kept there, so far as possible beyond the influence of evaporation.
4. Careful tillage lessens evaporation and also causes plants to grow more rapidly and vigorously.
5. If there is not enough rainfall in one season to produce a profitable yield, the land should be cropped only once in two years, the moisture of the fallow year being stored in the soil for the crop the following year.
6. Nothing except the crop should be allowed to grow on the land either when the crop is growing or when the land is being fallowed.
7. Only deep, uniform soils ought

(Continued on page 15)

DAIRYING

THE SILO

F. W. Merrill.

Most profit in the dairy business is obtained with farmers who build silos and store in them sufficient green succulent feed with which to feed their cows during the winter months. The time is not far distant in Utah when dairymen will abandon their pasture altogether and grow silage crops and silage crops. The average pasture in Utah is an unprofitable one. On many of them three acres is required for one cow—and the feed is not of the best. Nor in the right form to meet the cows requirements. Considerable energy is expended too, when a cow is compelled to tramp over three acres of ground to secure her feed. One acre of irrigated land in Utah if properly prepared will produce from seven to twelve tons of silage. Seven tons of silage will provide 40 pounds a day for every day in the year (and leave enough to feed a calf). And that is about the right amount for one good sized cow. In connection with this she will eat 2½ to 3 tons of well cured alfalfa. The extra amount of milk obtained by stall feeding will more than pay for the extra labor required.

There are many types of silos built of various kinds of material. The farmer must suit himself in making a selection, but he should make the selection advisedly—remembering that a silo must be air tight when filled, it must be substantial, and if built of wood he must protect it from dry weather and wind storms.

The pit silo sometimes called the "poor mans" silo is adapted to many sections. Wherever the water table is beyond thirty feet of the surface of the ground. A pit silo may be dug and it is just as efficient as a silo above ground.

Many farm crops are suitable for silage purposes, corn is perhaps the leading one, oats and peas or barley and peas, winter wheat and vetch, winter rye and vetch, sunflowers in part and farm crops that can be grown cheaply with a large yield per acre will prove to be suitable for silage purposes. The crops should be grown to as near maturity without the stalks becoming dry as possible. The crops should be cut into small pieces and packed in the silo firmly. The crop undergoes a slight fermentation, or becomes partially cooked. It is a very palatable food, highly re-

lished by all classes of live stock.

Men who have used silos recommend them highly. In Utah I doubt if a better ration could be planned than to feed alfalfa hay and corn silage.

The chief objection raised to the silage system is that it requires too much labor. The experience gained, however, which justifies this objection was obtained with a class of cows that were not worth the labor expended on them.

It stands to reason that if a cow can be kept in a cool comfortable stable screened from flies that she will respond at the milk pail to better advantage than if she is exposed to the heat of the sun, troublesome flies, dust and other annoying conditions found on the majority of Utah pastures.

The secret of feeding cows is to study the cow, discover her needs and supply her food in suitable form and in right proportions.

CLEAN BREEDING BARN

A breeding establishment should not only have a nice appearance on the outside, but it should be clean inside. We are told that generations back a breeding barn was very often conducted by men of low moral standards. We are glad that this condition does not exist to any great extent in this day and age.

We are glad to see a sign on the breeding barn prohibiting profanity or vulgar language. The successful breeders nowadays as a rule do not permit the telling of smutty stories. Neither should loafers be allowed to congregate at such a place for the consuming of booze. The breeder who is not a clean man cannot expect to command the respect and confidence of the better class of citizens.

FEEDING YOUNG PIGS

L. A. Weaver, Missouri Agricultural Experiment Station.

It pays to feed the young pig as much as possible both through the mother and later directly from the trough. Never again will he make such rapid and cheap gains and it pays to keep him growing as rapidly as possible while young. To this end the sow should be given all the good milk producing feed she will eat. When the pigs are about a month old they will begin to need something in addition to the mother's milk even though she is well fed.

As soon as the pigs will eat they should have skim milk in a shallow pan. Then a slop made of milk, some shorts, a little bran, and some oil meal or tankage. If this is fed with corn and the pigs are given plenty of exercise there should be no trouble from either thumps or scours. Mix by weight rather than measure four parts of corn, four parts of shorts, one part of bran, and one part of tankage. The little pigs should always be fed in a creep of some kind, that is in a small pen into which they come through and shut out the sows and larger pigs that would otherwise rob them. As the pigs become older, the amount of corn in the ration may be gradually increased until it has been doubled.

The pigs must be in the sunshine and direct light should get into the sleeping quarters to kill disease

FREE to all owners of cows

If you keep cows you ought to write for this book

THIS book was written for the man with only two cows just as much as for the man with twenty. In it has been gathered together a great fund of valuable information on subjects which are of vital interest to every cow owner. And while the various phases of dairying are treated by the best and highest authorities, it is not a technical treatise but is written in plain every-day language so that even the children can understand it.

Here are just a few topics that will give you an idea of the practical nature of its contents:

"How a Dairyman Made Good"—a real story of a real farmer, who starting with almost nothing, built up a fine dairy herd and made a big success.

"Year Around Feeding of Dairy Cows"—by an authority whose advice is well worth heeding. The importance of proper feeding deserves more attention from every cow owner.

"How to Judge a Dairy Cow."—shows by illustrations what points to look for in a dairy producer—explains the essential qualifications of a good dairy cow.

"Building Up a Dairy Herd"—a practical breeder gives some sound advice on this important subject.

"The Farm that Won't Wear Out"—shows that the farm where cows are kept, and the fertility returned to the soil, improves instead of deteriorates.

"The Care of Cream on the Farm"—quality is as important as quantity. It costs little and brings big returns.

"Silos and Silage"—one of the best chapters in the book. Full of silage facts that every farmer ought to know.

Then there are splendid articles on "Alfalfa," "Ventilation of Dairy Barns," "Breeds of Dairy Cattle," "Improving the Herd with a Good Bull," "Care of Freshening Cows," "How to Test Cows," etc. Numerous dairy rations, suitable for various sections of the country, are given, and various milk and dairy tables as well as tables of weights and measures, silo capacities, etc. that every farmer has occasion, at some time or other, to refer to.

Thousands of dollars have been spent in the preparation of this book, and if you keep cows you certainly ought to write for a copy and read it from cover to cover. The book is absolutely free. Just fill out the coupon or send the information requested on a post card, mentioning this paper.

The De Laval Separator Co., 165 Broadway, New York

Please mail me, postage free, a copy of your New Dairy Handbook. I keep _____ cows I sell cream, make butter, sell milk (cross out whichever you don't do). The make of my

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germs. Plenty of exercise is also important.

"Money, after all, is nothing but trouble."

"Maybe that is why so many are given to borrowing trouble."—Exchange.

"I wish I was a rock a-sittin' on a hill, A-doin' nothin' all day long But just a-sittin' still."

I wouldn't eat,
I wouldn't sleep,
I wouldn't even wash.
I'd just sit there a thousand years
And rest myself, by-gosh!"



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Let the Hawks and Owls Hunt All Rodents For You

Salt Lake City, Utah, August 22, 1916.
Dear Mr. Editor:

A couple of weeks ago "A Discouraged Dry-farmer" had something to say to the readers of the Utah Farmer about his troubles; and what is more to the point our brother told them in rhyme, after the fashion of one Walt Mason, widely known to this generation of readers as a poet who has adopted the prose form of expression as his very own. The burden of our Utah man's song was that the gophers were eating his grains, laying heavy toll on his income and getting fat, rolp-poly and saucy on the products of his toil. In spit of all the "dope" he had fed to Mr. and Mrs. Gopher and this year's children, these discriminating creatures and, like Jeshurum of old, waxed fat and kicked.

In my mind's eye, Mr. Editor, I can see all over the broad expanse of acres dry-farmed by our brother and I can see many things that are very common with other fields of productiveness all over this vast region. He cannot escape the view of beautiful green-clad mountains from any point on his farm of large or small acreage. Somewhere within his field of vision fertile valleys with their winding waters satiate the hungry earth that brings forth rich crops of yellow grains, green grasses and purple and golden fruits. At his back like a great bulwark of never-failing strength, stand these immovable mountains, on whose foot-hills he toils and his animals toil with him. And it is from these piles of the everlasting rock, homes of eternal snows, that he gets the water for his home, his stock and the rich and wonderful cereals he grows. Right on the last benches of these never-complaining upheavals of nature he plows and harrows, levels and drills, reaps and binds and threshes an abundant harvest of his chosen kind. Fed by the eternal waters that trickle underneath his acres these grains appear as though at his beck and call and are finally garnered in granaries that burst with the fullness of their stores.

There is a life of the mountains separate and quite distinct from that of another locality. There is also a life of the foot-hills, one of the plains and one of the valley and its waters that is unlike in many respects that of any other portion of the land. Long before this "Discouraged Dry-farmer" and his family filed on the sunny acres of naturally watered soil, the land was occupied by Mr. and Mrs. Gopher, the large eared Mr. and Mrs. Fieldmouse, Mr. and Mrs. Sharp-nosed Shrew, the well known Mole family, Mr. Rattler and his numerous progeny, Mr. Blow-snake and his little ones and a host of other creeping and crawling things planted thereabouts by a wise and never-failing nature. While in the crystalline and all-supporting atmosphere around them lived a band of brave, feathered pioneers, invaluable creatures, all willing to be friends of man if only he will allow them to be.

Before the dry-farmer's advent into that region there was a harmonious, unassailable balance maintained by nature in her own way. Immediately man established himself as the arch enemy of everything that flew in the air, all that crept and crawled upon the earth, and preyed upon every living thing in the streams upon which he depended for lifegiving refreshment.

Perhaps this man and his large and small sons did not shoulder rifle and shotgun and sally forth upon the first day of their arrival in this special community to kill whatever their eyes looked upon. It is quite probable that others murderously inclined had paved the way for this farmer's coming by killing all that was called "game" within miles of his chosen site. And the only reason the measly gopher and his large relationship was not gathered in with the rest of the wild-life taken, was that they are not looked upon as edible, furnished no zest to the hunt! And yet, want only, cruelly and murderously are these shy little creatures shot—left to lie where they have fallen—just because someone is permitted to carry murderous weapons!

What is it that has maintained such a equal balance among the live things of the fields and forests? How has such a condition been brought about?

It might be the easiest way first, to say what has disturbed this balance and why these farmers are now complaining of the tiny beasts that prey upon their hard earned substance. The instrument of all instruments that has had the mots to do to rid the earth of its normal balance has been the rifle or shotgun in the hands of unthinking men and boys. The real harmony that exists in nature in her undisturbed state is rendered ineffective by the destruction of the feathered friends of the air that normally feed upon the insect, animal and reptile life manifest everywhere.

The hunting instinct has been bred in mankind for thousands of years. Such a development has its place in any country where the supply of nitrogenous food is scarce except as it is gained by the hunt or chase. Wild animal life is good food for those who crave such nourishment. Among the pioneers such food was sought with rightful thought and thankfulness to the source of its supply. Since hunting wild game of any sort has become more of a tickling of one's fancy to delight a rapidly vanishing instinct for such things nowadays, it is not supposed that thinking individuals would take secretive advantage and plan deliberately upon breaking the laws, just for a fancy, for a whim! Especially when laws are made to protect all manner of wild-life for their great economic value, would one feel that consideration should be given to the rights of others in activities of such worth in the way of true CONSERVATION.

I believe that every created thing is the material expression of Divine Intelligence. That each thing or creature in all the universe was formed as it is for a purpose and that whenever we interfere with the fullest possible expression of such a thing's activities we err in judgment, and bring about conditions that are irremediable unless we mend our ways and thereby gain a more acceptable view-point of the worth of all physical creation.

I have been upon farms in this and other regions when a hawk or an owl was seen to alight upon a nearby fence post or upon the limb of a tree in plain view. Every male member of the family present immediately was overwhelmed with but the one thought, "Where's the gun!" It did not matter to anyone present, it rarely does matter until too late, what sort of a hawk

(Continued on page thirteen)

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We guarantee every subscriber against loss thru dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent upon application.

The state of Wisconsin has recently created the office of Commissioner of Agriculture. The law provides that the commissioner shall be appointed by the Governor, by and with the advise and consent of the senate. The term of office is for four years and his salary is fixed at \$5,000 per year. In future issues of this paper we will review some of the work of this department.

MOTHELCRAFT

The Utah Agricultural College will offer for the first time a new group of courses to be called—"mothercraft". "Mothercraft means the science and art of child rearing and family management."

This course is a new one, and an important one, when we consider that children is Utah's best crop.

LITTLE THINGS

Little things, little acts, words and movements often develop into astounding results. It is the little things on the farm that amount to so much. The saving of good seed, the proper caring of live stock, preventing mice from destroying our stored grain and a hundred other little things that might be drawn to your attention.

It is the doing of these little things by every farmer, that will help them to save money and prosper.

It really doesn't matter what we are talking about so long as we do learn that little things are the materials out of which big things are made. The small things tends to prepare the way for bigger things.

FIGHT THE WEEDS

Every weed we cut or pull up in time to prevent the production of thousands of seeds, will mean less weeds to pull and cut next year. Many of them have already gone to seed and should be burned.

A few sheep will greatly help to destroy the weeds and the weeds will furnish food for them.

We must fight the weeds, destroy them, so their seed will not blow all over our farms.

We pay a big price in the way of a loss to raise weeds each year, our ground ought to produce something else.

Burn the weeds along the ditch banks and fences, do something to prevent them seeding and growing next year.

FARM LOAN BANK

About September 13th or 14th members of the Federal Farm Loan Board will visit Utah. Their visit at this time is to learn the advisability of locating one of the twelve federal land bank in this district.

Farmers and business men have met in Ogden and Salt Lake to start a movement and will present our claims for the location of one of these banks in Utah. The visiting board wants information and facts as to the need of cheaper farm loans.

Farmers and land owners are the ones most directly interested and should prepare to meet these gentlemen and secure one of these banks

If those who are to be most directly benefited by the banks do not show interest we can not hope to secure one. There will be a big advantage to Utah if we can secure one of these banks and handle all the federal farm loans through it for the inter-mountain country. Prompt and co-operative action will be necessary.

PROVIDE FEED FOR THE WINTER

The high price of hay and all kind of feeds should cause every one to save any thing that will do for feeding their live stock. Do not wait until winter and then be compelled to buy hay at a high price to save your cattle or horses.

Straw can be feed with profit and should be stacked carefully to avoid wasting. Pasturage can be provided to save the hay if we will spend a little time. Our oat and wheat fields can be pastured. Alfalfa fields can be used where a third crop will not be high enough for cutting.

Extra care should be taken in making of our straw or hay stacks, much hay is lost because the stacks are poorly made. Before the fall rains and winter storms come top them off good so they will shed the water, saving hay is like making hay.

If you have plenty of hay this is good advice because you will have some hay to sell at a good price. Right now is the time to provide for winter feed for your live stock.

FOREST FIRES

Because of the extremely dry and inflammable conditions, there is much danger of forest fires at this season of the year.

Carelessness with camp fires and matches often start many fires that grow to great proportions if not checked. Fires that start on our low hills often spread into the mountain because of the dry grass at this season of the year.

The Forest Service has reduced the loss by fire the past few years because of their efficient service. This year 20,000 miles of forest trails have been built and 20,000 miles of telephone

wires have been strung. This was done in order to help the forest rangers in their work. Should you discover a fire telephone the nearest office. More people are going in to the mountains each year to spend their vacations. Good roads are being built and the government is working to bring about the best results for the good of all the people.

DIM YOUR HEADLIGHTS

The other night while traveling a distance of about 75 miles and passing a great number of autos, only a very small per cent of them dimmed their lights when passing our car. Some of the roads are very narrow and built quite high, if two autos meet at such a point and because of the bright glare of headlights he turns a little too far, to avoid being hit by the approaching car, he may cause his car to be thrown over.

The brilliant headlights put other motorist to a great disadvantage, he can not tell how far to turn with safety nor can he locate with in some distance the approaching car.

Common courtesy should cause auto drivers to dim their lights but it seems that many of them do not understand what this means. Many fail to have an appreciation of the rights of others.

If warnings will not bring about a change then the laws should be enforced and some arrest made. Motoring at night in canyons and on many of our roads is dangerous when people will not dim their lights and want to hog the greater part of the road.

WARNING TO FARMERS

We have just received the following letter which will explain itself:

TREASURY DEPARTMENT

Washington D. C.

"Information has come to the Federal Farm Loan Board that in various parts of the country certain parties are soliciting subscriptions to stock company organizations under different names, claimed to be operated under the Federal Farm Loan Act, and asking advance payment of such subscriptions, especially from farmers.

The members of the Federal Farm Loan Board are now engaged in the work of organization, holding hearing in various cities for the purpose of securing information with a view of determining the boundaries of twelve Federal Land Bank districts, and the location of one land bank in each district. Until these land banks are established, no loans can be made.

The representation by any person that any organization is now offering to make loans by authority of the Farm Loan Board under the Federal Farm Loan Act is false, and any attempt to collect money under such representation is fraudulent and is punishable by fine and imprisonment under Section 31 of said Act.

It is desirable that farmers should discuss among themselves the benefits to be derived from the Federal Farm Loan Act and to take preliminary steps for the organization of National Farm Loan Associations as soon as the Federal Land Banks have been established, but no money should now be paid in connection therewith to any person for stock or expenses, no matter what the representation may be.

W. W. FLANNAGAN,

Secretary, Federal Farm Loan Board.

Making The Farm Pay

Recently sixty-four groups of farms in nineteen states were studied in order to ascertain what the farmer obtained for his year's work after deducting the interest at 5 per cent on the value of his farm and other capital—in other words, to find out his labor income or wages. In each of these groups, which included altogether 4,400 farms, the conditions were reasonably similar. In each group the farmers were divided into five numerically equal classes according to their labor incomes.

It was found that although the average labor income for all the groups was only \$387, the average for the farmers in the first class—the fifth of the farmers who did best—was \$1,221. In the second class it was \$642. The last class—the fifth of the farmers who were least successful—got nothing for wages and lost, on the average, \$517. That is to say, the interest on the amount of money represented by their farm, stock and equipment would have been \$517 more than the farm returned them.

It should be borne in mind in this connection that the labor income is merely the farmer's wages, and that the family has in addition, besides interest on investment, the use of the farm house and such fuel and food as the farm supplies free of money cost.

Not Question of Luck

Other demonstrations have produced similar results. In almost any northern community, one-fifth of the farmers are making approximately \$1,000 a year more than the average and \$2,000 more than the least successful.

ful. This is not luck, nor is it altogether, or even chiefly, a question of the skill of the individual farmer. Further analysis will show that the successful men are following certain methods adapted to their conditions and that the unsuccessful ones are not. It is the business of the county agents and farm management demonstrators to ascertain what those methods are and to point them out.

How this can be done is shown by a study of a farm which, for the sake of convenience, can be called the Baldwin farm. The owner's labor income one year was minus \$45—his income was \$45 less than the interest on his farm and equipment. That year the average labor income on 193 farms in the same community was \$190 and for the twenty-five most successful farms \$750. The amount of capital represented by the Baldwin farm was a little more than the average and a little less than that of the best farms. In neither case, however, was the difference sufficient to account at all for the striking difference in income.

Unprofitable Cows

There were, however, other differences which did account for it. Baldwin had fifty-one acres in crops, as compared with an average of sixty-eight, and for the best farms of ninety-three. He fed practically all his crops to his eleven cows and two horses, but the receipts in butter and milk from each of his cows averaged only \$30. On the average farm there was six cows, giving average receipts of \$44, and on best farms eight cows, with

average receipts from each of \$62. The other farmers with their larger crop acreage had a surplus of crops

to sell. Baldwin, with as good yields as the others per acre, had practically (Continued on page 14)

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Questions and Answers

Marysville, Utah.

Utah Farmer:

Gentlemen:—Will you please tell me in the next issue of your paper whether or not my poultry have canker. They become dull, the comb becomes very dark, they have a very bad choking cough, the throat and mouth become all full of white sores, and breathing is very difficult. There is apparently no swelling on any part of the bird. They refuse to eat but drink a great deal of water.

Thanking you for the favor I am,

Yours truly,

John N. Henry.

Answered by Prof. Byron Alder.

I believe that you have canker in our flock of fowls. The description that you sent in follows very closely the description of this disease. Prevention is the best treatment if you can find the cause of the disease, remove the cause and get rid of the trouble in that way. Professor Pearl in his book on disease recommends the following for getting rid of this trouble:

"Immediately separate from the flock any birds that show symptoms of the disease. Disinfect the houses and immediate yards with a 5 per cent solution of carbolic acid. Remove the litter from the house and disinfect freely. It is a good plan to follow disinfectant with a good white wash, spraying white wash so as to give the house a good coat. Keep watch of the flock so that any new cases may be isolated at once. Burn or bury deep all birds that die." Cresol, zenoleum or some other good disinfectant may be used instead of carbolic acid, with the same results.

The disease may be cured by special treatments but this must be individually and require a great deal of time. It must be continued once or twice a day for quite a long time. It is, therefore, very expensive and consequently impracticable for ordinary stock. In treating the disease the spots in the throat are washed twice a day with some good disinfectant. Continue this treatment until the trouble disappears.

Infection may come from polluted food, drinking water, or litter in the house; so the food should be kept clean. It is often advisable to disinfect the drinking water by putting 4 or 5 drops of carbolic acid in each gallon of water and stir thoroughly, or by putting a few crystals of potassium permanganate to the drinking water.

EPITAPH

Eden Phillpotts.

When the dust of the workshop is still,
The dust of the workman at rest,
May some generous heart find a will
To seek and to treasure his best.
From the splendor of hopes that de-
ceived;

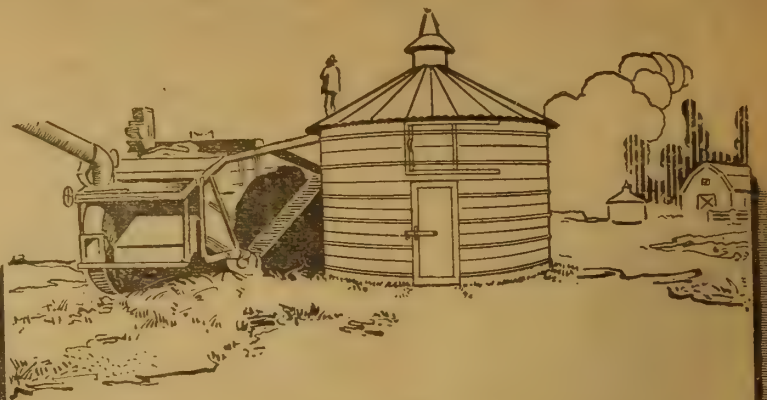
From the wonders he planned to do;
From the glories so nearly achieved;
From dreams that so nearly came
true;

From his struggle to rise above earth
On the pinions that could not fly;
From his sorrows; oh, seek for some
worth

To remember the workman by.
If in vain; if Time sweeps all away,
And no laurel from that dust
springs;

'Tis enough that a loyal heart say,
"He tried to make beautiful things."

A lazy man is just about as useless
as a dead one—and besides, he takes
up more room—Elbert Hubbard.



Thresh Direct Into Butler Bins

One of the many superior points of Butler Bins is their height, just right for receiving grain from the separator, eliminating extra labor and time of men and horses during the busy threshing season.

The superiority of Butler Bins is easily seen by anyone who will compare them with other makes, or will study our booklet, which your dealer will gladly furnish or we will mail free.

Store Your Wheat For Profit Use Butler Bins For Safety

Butler Bins have often paid for themselves several times over in a single season, and you can store your grain for the high market with perfect safety because Butler Bins are absolutely rat, fire, and weather proof. Any agricultural journal or other authority tells the folly of storing in wooden bins. Butler Bins will outlast any wooden bin, and keep your grain in much better condition. Get our "Letters from Satisfied Users."

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Every man feels instinctively that
all the fine sentiments in the world
weigh less than one fine action.—
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SHALL WE VOTE FOR TAX AMENDMENT NEXT NOVEMBER

Francis W. Kirkham, Salt Lake City.
Since the last legislature passed a law, limiting the tax rate there is an imperative and absolute need that an amendment to the Constitution of the State of Utah, proposed by the last legislature, be passed.

The three members of the State Tax Commission unanimously agreed that the limitation of the tax rate was a proper and necessary reform. Two of the members of that Commission, however, were not willing to recommend that such a law be passed until the Constitution was amended, and following are the reasons, pro and con:

The majority members showed, and it was not denied, that the lowering of the rates by legislative enactment would have the immediate effect of reducing the taxes of the mines of the state so that they would pay, under the new law, only approximately one-third of what they paid under the old law. The reason being that under the Constitution of the State, mines are assessed on their net proceeds, and cannot otherwise be assessed. The theory and practice of the law for all property is that the value of the property be assessed and not the net income.

It was further pointed out that the banks of the state were assessed by common practice at 70 per cent of the value of their capital and surplus. It is unjust and unfair to tax the small country bank at the same rate—a bank which has only a few deposits, as large banks which have large deposits. Either the small bank is taxed too heavily or the large bank is not taxed enough. It was evident to the Commission that if the tax rate be lowered to one-third the old rate, the assessed value of the banks could only be increased from 70 per cent to 100 per cent and therefore the relative increase of the bank taxes would not be as great as the increase to the farmers, the merchants, or the stock raisers.

The majority members of the Commission were not willing to recommend a law which, at one sweep, would take from the mine two-thirds of their burden, and take from the rich banks of the state a portion of their burden and place this extra burden upon the average citizen. The other member of the Commission insisted that if a law be right it should be enacted and that this was the only way by which reform could come. Unless the people were brought face to face with the tax problem unless they felt definitely its injustice, we must wait from year to year for an Amendment to the Constitution of the State which would give us the relief we so much needed. Evidently the last legislature took this point of view, for the law was passed, which lowered the rates, and thereby automatically increased the assessment, and at the same time an amendment to the constitution was proposed, which, if now passed, will give the incoming legislature the power to increase the tax of mines to approximate the taxes now paid by other classes of property.

This year has been one of the greatest years for the mines of Utah in its entire history. The net proceeds of the mines will be almost three times as much as they were three years ago, but notwithstanding the fact that the income from the taxes of the mines will be as great, under the new law as under the old law, due

to this enormous increase in their profits, yet it is greatly to be desired that a condition which will allow their taxes to be only one-third of what they should be shall be immediately remedied; this can only be accomplished by voting for the amendment to the Constitution as proposed by the last legislature.

Further reasons for a favorable vote upon this amendment will be pointed out in future articles.

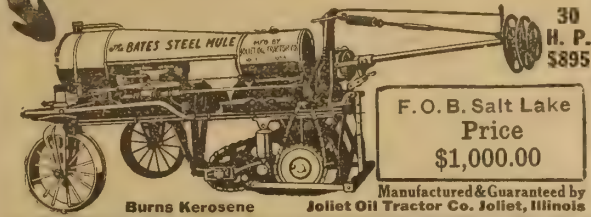
Let us face the question of taxes honestly and fairly. Each year we are demanding that the Government provide for more expenditures for the public good. So long as the demand for these expenditures are made we must pay the taxes. The absolute amount of taxes cannot be reduced unless we are willing to have less public improvements, but, the tax burden can be equalized and placed where it more properly belongs. The expenditures of the last National Congress far exceeds any previous congress, and the expenditures of all the cities, counties, and states, as well as the United States, have been increased, not only relative to population, but far in excess of the relative increase of population or over one hundred years, and there is no reason to suppose that this condition will be changed.

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Bates Steel Mule

No new implements are needed. Your old tools will do the work cheaper, quicker and better when hitched to a Bates Steel Mule. Come in and let us tell you all about it.



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One Man Harvests 40 Acres a Day.



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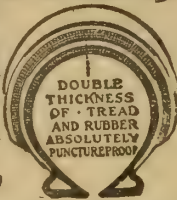
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30x3 in.	\$ 8.60 \$2.30	36x4 in.	\$17.45 \$4.65
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Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Description folder upon request. Write for it.

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HOME

SOME USES OF RICE

Several ways of serving this nutritious cereal is suggested by the experts of the Home Economics Department. They have been studying the uses of rice, a food which can be served in many palatable ways all the year, but which seems particularly appetizing in summer.

Boiled rice prepared in southern fashion, so that all of the grains are kept separate, is sufficiently attractive in appearance to justify its slight wastefulness, except, of course, where strictest economy is necessary. Slowly add a cupful of thoroughly washed rice to a quart of rapidly boiling water, which contains 2 level teaspoonfuls of salt. If carefully done, the boiling (which should continue all of the time the rice is cooking) will not be stopped. Stirring is not permitted, as this will break the rice grains. About 20 minutes is sufficient to cook the rice, which can be tried from time to time by taking one or two grains between the fingers. Pour off all the water from the cooked rice, cover with a cloth, and place in a warm part of the stove, so that the grains will swell. To remove the starchy material from the outside of the grains, cooks sometimes turn the cooked rice into a strainer and pour 1 quart of hot water over it before covering with a cloth and allowing to steam and swell. A cupful of raw rice cooked in this way will give over 4 cupfuls of very white and light boiled rice. The water drained off from the rice can be used in soup making to save the starch and mineral matter which it contains.

If one wishes to use a fireless cooker, add a cupful of well-washed rice to 3 cupfuls of boiling water, in which 2 level teaspoonfuls of salt are dissolved. Cook for 5 minutes and then put in a fireless cooker. In 2 hours the rice should be done. If any water remains unabsorbed, it can be drained off. Rice varies somewhat in the amount of water it absorbs, and the housekeeper accordingly should vary the amount of water used.

Rice cooked as described above is excellent when served as a vegetable with meats, as in the well-known "chicken and rice." Such uses of rice are particularly welcome in the period when "old potatoes" are not very palatable and "new potatoes" have not yet appeared in the locality or are high in price in market.

Another dish which has almost as good an appearance may be prepared by cooking rice in a double boiler, without stirring, and using about three cupfuls of water and a level teaspoonful of salt to each cupful of rice. If a more savory dish is desired, skim milk, whole milk, meat broth, strained tomato juice, or vegetable broth may be used in place of water. Rice may also be combined with protein-rich foods, such as milk, cheese, and eggs for use in place of meat, or with small amounts of vegetables to make the latter "go further." Of course, such a dish does not contain as much tissue-building protein as if it were made entirely of meat, but when the meat provided ordinarily is generous and the aim is to reduce the cost without lessening the attractiveness of the food, such combinations are well worth trying.

The following recipe for an economical dish made with rice and

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If there's any work that makes a man's socks look "all-shot-to-pieces," it's farm work. You're on your feet most of the time, doing the jobs that are hard on shoes and even harder on socks. Don't put up with sore feet and quickly worn-out hose. Buy socks that are built strongest where the wear is hardest.

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Great Bargain Fully Paid Up Water Right

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We have just secured the agency for one of the finest tracts of land in the Western country, at Downey, Idaho. This land was held by some eastern people, and they have tracts on easy terms. If you are looking for a firstclass irrigated farm, where the land will pay for itself, write for one of our folders.

92 acres good land in the Bear River valley to exchange for a home in Salt Lake City.

120 acres of land near Bear River City. Tile drained and under high state of cultivation. Will sell for \$80 per acre on ten years' time, at 6 per cent interest. Very small payment down. Full water right from Bear River canal.

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If you are careful to specify "Utah-Idaho" when buying sugar, you are always sure of getting the purest, whitest, sweetest sugar made.

Use this sugar for canning, preserving, jelly-making, sweetening foods and for every purpose where sugar is used.

You'll find it economical to buy a sack.

UTAH-IDAHO SUGAR
ABSOLUTELY PURE

left-over mutton may prove useful.

Steamed Mutton and Rice.

4 cups cooked rice.
2 cups cooked mutton cut into small pieces.

1 teaspoonful salt.
Few drops onion juice.
1 tablespoonful chopped parsley.
1/4 cup bread crumbs.
1 egg.
1/4 teaspoonful pepper.
Stock or water as needed.

Grease a mold or a bowl of about 1 1/2 quarts capacity and line with cooked rice. Heat the meat with the other ingredients, using enough stock to make a mixture that is moist, but will hold its shape. Pack the meat in the center of the mold and cover with the remaining rice, grease the cover of the mold (if a bowl is used, a plate will serve for a cover), steam or cook in water enough partly to cover the mold until the contents are thoroughly heated through. Turn on a hot platter and serve with tomato sauce.

The above recipe, it will be noted, suggests the use of bread crumbs instead of flour for thickening, which is often a way of saving bread which might otherwise be wasted, and which is also one way of securing variety, as a different texture results from that when flour is used.

If one finds it convenient, cold lamb, veal, or chicken may be used in place of mutton in preparing this dish.

As the basis of a sweet dessert, rice is always useful, especially so for invalids and little children. If combined with milk and eggs, it makes a very nutritious dish as well as one easily digested. Plain boiled rice, cooked either in water or in milk, and served with a little stewed fruit, maple sirup, honey, or other simple flavor, makes a more wholesome dessert for children than rich puddings or pies because it is less likely to upset the digestion or to destroy the appetite for simple foods.

Cold rice, particularly that which is cooked so that the grains are separate, is a good addition to vegetable salads, combining well with celery, string beans, and tart apple. If one wishes, some chicken cut in small pieces also can be added.

It is well to remember that when rice is used abundantly in the diet it is particularly desirable to include generous amounts of green vegetables and fruits also, in order that a supply of vitamins and of mineral substance adequate in kind and quantity may be provided.

MUSICAL EDUCATION

IMPORTANT

Constance Barlow Smith.

"Music-education is an important feature in the nation life of any country; especially is this true where the population is as mixed as it is here in America. Music makes an appeal to all classes. It furnishes a common bond of sympathy for people of different nationalities, and it is an invaluable agent in promoting friendships, and bridging differences."

These are only a few of the reasons why music in the public schools is so important and essential in the education of children.

"A large majority of the children in the public schools are pursuing the study of music in some form or other. Seven hundred millions of dollars are spent annually by the American people for music. I, for one, am unwilling to accept the oft repeated statement that we are not becoming a musical nation,



As ONE Sun Heats the Entire Earth—So ONE Register Heats Your Entire House

The Caloric way is Nature's way—most sensible, economical and healthful. No unsightly, expensive pipes and flues to cause fire danger, waste heat and clutter the cellar. The absence of pipes prevents overheating the cellar, hence produce is not spoiled. Its great heat radiation will save you at least 35% of your fuel.



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There are three reasons for this big saving. 1st, The warm air reaches your rooms by nature's direct method of circulation and there are no pipes to absorb or resist the heat. 2nd, Our double ribbed firepot and specially patented combustion chamber produce perfect combustion, thus insuring thorough burning of the fuel and a much greater heating surface. 3rd, Our specially patented triple casing, insulated with two air spaces, prevents any heat from radiating into the basement. This is the only successful, patented, one-register furnace and no other furnace can claim these three big features. This means that you get all the heat from your fuel.

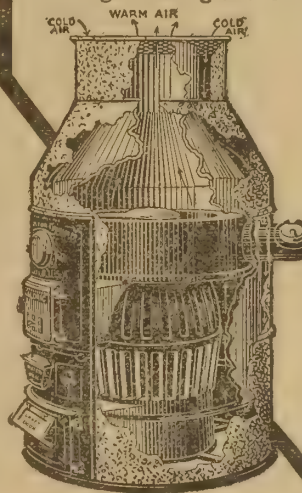
Sold Under Guarantee

Put the Caloric Pipeless Furnace in your house and give it a fair trial. Its successful operation is guaranteed and we'll make right any defect in material or workmanship. Our firepot is guaranteed for five years.

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If there is no dealer at which you can see this furnace, we'll gladly send you our free illustrated book, with the name of our nearest dealer. Send us your name and address on a postcard immediately.

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and that we are simply commercializing music in this country and thus regressing art, because I firmly believe that where such music is composed, performed and listened to, there must of necessity be a sense of appreciation which is bound to reflect its influence in counteraction of the perhaps overdeveloped dollar sign.

"Never in the history of America has there been so marked an interest in music education for the children as now. There is a widespread and ever growing movement to make music a democratic possession. Consequently we realize that the time has come when the children must have knowledge of the subject. It is evident that the American people have discovered that something of vastly more importance than mere commercial success is necessary in the pursuit of real happiness.

"We also find that civic music societies and committees are providing good music for the recreation of the people upon a much larger basis and in more methodical ways than has ever been done in this country before. As the public school is the legitimate

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Placed anywhere, **Daisy Fly Killer** attracts and kills all flies. Neat, clean, ornamental, convenient, and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Ask for **Daisy Fly Killer**. Sold by dealers, or 6 sent by express, prepaid, \$1.00. **HAROLD SOMERS, 150 DeKalb Ave., Brooklyn, N. Y.**



and fertile soil in which to scatter carefully selected and well nurtured seed for the future welfare of the commonwealth, our interest in music-education has in the natural course of events, become centralized in this field of effort.

"Music in the high school should be elective in all courses except one—that of ensemble singing. Credit should be given for the work, hour-for-hour, with other subjects. Musical history, harmony, appreciation and applied music are receiving recognition as credit studies in a large number of schools. Music in the high school is the natural climax of the work accomplished in the grades, without which the child is deprived of logical development."

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May be determined by the protection against friction which they give your machinery. If you use

Green Harvester Machine Oil

you'll find that your machinery will give longer and better service, and reduce the "friction" load your horses now carry. Get a can today.

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Salt Lake City, Utah

SHEET MUSIC

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DAYNES-BEEBE MUSIC CO., Salt Lake



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\$40.00 TO SAN DIEGO
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ON SALE DAILY beginning MAY 1st.
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BEAUTIFUL SAN DIEGO EXPOSITION
OPEN ALL YEAR
I. H. Manderfield A. G. P. A.
10 E., 3rd South St.
Salt Lake City, Utah.



Mention Utah Farmer when you write

FITTING SHEEP FOR SHOW

The modern live stock show is primarily and educational institution. Farm animals of all kinds are assembled and competent judges arrange them in order of merit according as they approach closely or fail to meet certain well-defined ideals of type. Live-stock shows help toward uniformity of type and harmony of effort in animal breeding and are the meeting places of those who are producing live stock to sell and those who desire to purchase live stock.

The exhibitor learns much in the show ring that is of value to him in his breeding operations but the principal benefit comes in the way of advertising. Hence, the advantage of specially preparing and fitting animals for show. There is certainly nothing to be gained educationally in driving sheep from a pasture and showing them to visitors without any attempt to clean or prepare them for critical inspection. Some fitting is necessary even for our smaller fairs and live stock shows.

The first effort should be made in selecting animals of such conformation as to properly represent their type and breed. In most breeds of sheep the choice for the show ring should fall on a reasonably low set, thick, strong-backed, and vigorous individual that shows to a considerable degree the particular characteristics of the breed to which it belongs. Additional flesh as compared with pasture condition will result from a little especially good pasture for the cooler hours of the day, shade during the midday hours, and a grain ration of bran and oats. If the animals are quite thin and need to be crowded, they may be left on pasture but one hour daily and given a heavier grain ration and clover and alfalfa hay in addition to the grain.

The feet should be trimmed and the sheep taught to stand squarely on the legs. The fleece should be freed from straw or other coarse material and blocked out with a pair of hand shears. In the block-in-out process the wool over the back is cut down and leveled, and the side lines straightened, and the entire form as represented by the wool is made more shapely. The wool surface is then evented by careful trimming until the entire outline is regular and attractive to the eye. A dampened brush is used on the fleece. Brushing straightens the fibers so that when once trimmed, the fleece keeps the form given it with the shears.

Some experience must be had in order to get good results in trimming. A little preliminary instruction and some practice on sheep not intended for show, however, often enables a beginner to materially improve the appearance of animals destined for the show ring.—E. J. Iddings, University of Idaho.

THE JOB OF A MAN

It isn't the work we intend to do
Nor the work we've just begun
That puts us right on the ledger sheet;
It's the work we've really done.

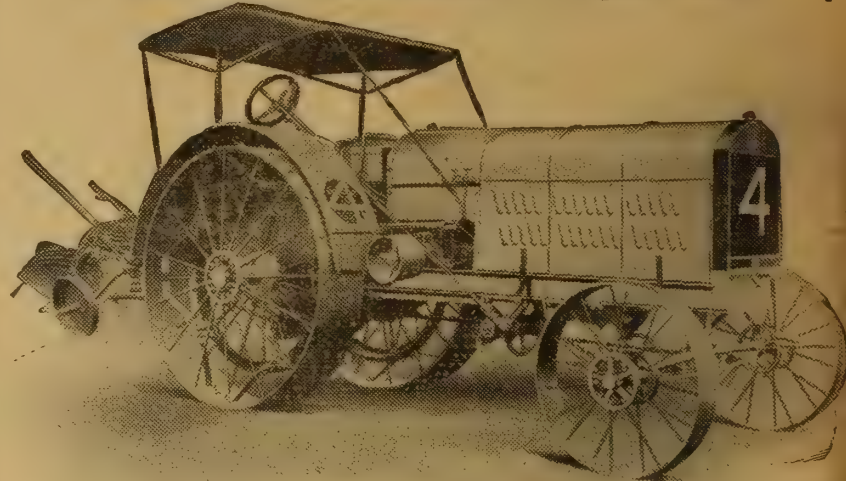
Our credit is built on the things we do,
Our debit on things we shirk;
The man who totals the biggest plus
Is the one who completes his work.

Good intentions do not pay bills
It's easy enough to plan;
To wish is the play of an office boy,
To do is the job of a man.

—System.

The Big Four "20" Tractor

A Light Weight, Four Cylinder, Two Speed Tractor



The Big Four "20" Farm Tractor

HERE is the outfit that will plow all your land. No more fence corners and headlands left unplowed if you use the Big Four "20" and Emerson Power

Lifted Plow

A combination of Tractor and Plow—Each made to work with the other. The power of the motor rises or lowers the plow whenever you push the lever, whether Tractor is moving or standing still.

For further information write

MILLER-CAHOON COMPANY

Murray, Utah

Idaho Falls, Idaho

University of Utah

Salt Lake City, Utah

Instruction begins Monday, September 18th.

Registration of students and entrance examinations on Thursday, Friday, Saturday, September 14th, 15th and 16th.

Registration fee during the three registration days—September 14th, 15th and 16th—\$10.00; after that \$12.00.

Proper buildings with spacious laboratories replete with modern equipment, and a Faculty composed of graduates from the leading universities of the land, are AT YOUR SERVICE.

Courses are offered that prepare for almost any vocation.

The credits of the University of Utah are accepted in full by the best universities in the United States.

Full information sent upon request.

UNIVERSITY OF UTAH, Salt Lake City, Utah.

Big Money in Running Water

Let us start you in a business that will make you from \$15 to \$50 a day when farm work is slack. Other men have done it for years with an

Improved Powers Combined Well Boring and Drilling Machine

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for wells to water stock and for irrigation. Write for free illustrated circulars showing different styles

Lisle Manufacturing Co.
Box 978 Clarinda, Iowa

One Man
One Team

GREEN CONCRETE MIXERS

No matter how small the job all concrete should be thoroughly mixed. The old method of shoveling is tiresome from a physical standpoint and is very unsatisfactory for consistent mixing.

Our foot, steam or gasoline power mixers will solve the problem for you. Made in several sizes and endorsed by all who have used them. Made in Utah.

Write for information and bulletins.

GREEN MACHINERY and MFG. CO.
American Building 338 So., Main St.
First Building north of Post-Office
Salt Lake City, Utah.

Mention Utah Farmer when you write

LET THE HAWKS AND OWLS
HUNT ALL RODENTS FOR YOU

(Continued from page five.)
or an owl one saw, as long as it was a hawk or an owl it must be shot. For don't they steal our chickens? Sup-

Save
Money & Work
in Ditches

Here is the answer to the irrigation farmer's problem. Cut ditches quickly and easily with a Martin Ditcher. Try it 10 days at our risk.



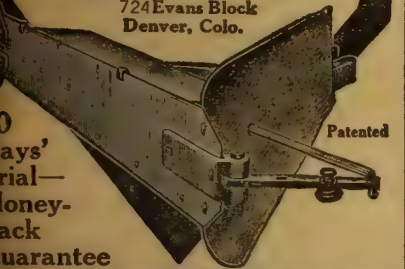
The most useful tool ever brought onto the farm. Cuts 4 ft. V-shaped ditch. Big success in irrigation country. Takes the hard work out of making ditches. Fills gullies, levels bumps, grades roads.

The Martin is made of plowshare steel and will last a lifetime. Scours in any soil. Adjustable for any width cut. Reversible.

Write for Book

It describes machine and tells what hundreds of owners are doing with it. Write today.

OWENSBORO DITCHER & GRADER CO., Inc.
724 Evans Block
Denver, Colo.

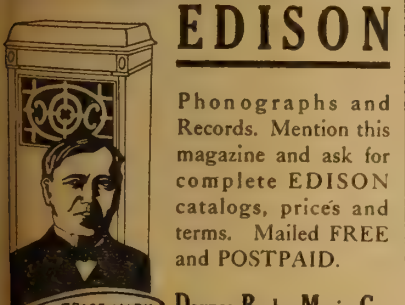


Send for NEW CATALOG
Well Drilling Machines

Have a Business

Owners of "AMERICAN" Well Drilling and Prospecting Machines make large profits either as a regular business or a side line. The demand for wells is large, and from our extensive line comprising 59 styles and sizes, we can select a machine suitable for almost any locality or formation, and arranged for almost any kind of power. Write for new illustrated catalog No. 145, Free.

THE AMERICAN WELL WORKS
General Office and Works:
Dept. 36 AURORA, ILL.
Chicago Office: First Nat. Bank Bldg.



Phonographs and Records. Mention this magazine and ask for complete EDISON catalogs, prices and terms. Mailed FREE and POSTPAID.

—BABY CHICKS—

C. White Leghorns Fall Delivery Place your order now for delivery during September, October, and November. September \$10.00 per 100; October \$11.00; November \$12.00. Prices in large lots, furnished on application. Also booking orders in Browns, Rocks, Reds and Black Minorcas.

THE ORLAND HATCHERY
Orland, Glenn Co., California.

pose the very worst member of these families of predatory birds does get away with a chicken once or twice a season, an suppose that fowl were worth one big silver dollar, has my brother dry-farmer ever stopped to estimate the value in dollars and cents of the rodents of all kinds that annually fall a prey to the appetites of these birds?

Putting the price of one cent per head upon all gophers and his cousins, how many are in a position to tell me the value of even one hawk or owl to the farmer, wet or dry, each season? When I was a boy on the farm in Illinois and Iowa they used to give us five cents a head for all such rodents captured on the farm for the reason that earlier settlers had killed off almost all of the hawks, owls, butcher birds, jays and other birds that kept the balance normal in those regions. Suffering from the same cause, bad judgment in killing wild-life, the farmers in those days and even now regret their hastiness in such brutal sacrifice! Always, when it is too late!

Besides eating thousands of Gophers and other rodents each season many of these birds destroy millions of insect pests in one form or another. And the farmer in turn kills the bird because of the loss of a few chickens or turkeys, forgetting what a savior he has in these feathered things, until they have become so scarce that his fields are being devastated by the little animals that burrow in the earth, glad of a change in diet, to be sure, and only willing to fill their tiny larders with his grain well beneath the point of plow or harrow tooth.

Man preys upon the beneficial and the non-beneficial birds of the air, usually ignorantly, but often with malice in his heart; these birds when allowed the indulgence of their own expression eat of the rodents and insects, the poisonous and the non-poisonous reptiles and render invaluable service to all mankind; the snakes of either type feed upon the same rodents and destructive insects when permitted to live, each preying upon the other naturally,—and thereby is the balance maintained that an all-wise creator intended.

If our "Discouraged Dry-farmer" brother went into a brand new country and found this balance existing there in perfect harmony, and then lent the energies of himself and his family to the destruction of this equanimity, he has only himself to blame! Such shortsightedness reaps its own harvest! His and that of his family is that of discouragement and unhappiness, dissatisfaction with a hugely productive land when tilled with real intelligence and good judgment. If he has neighbors who have cleaned out the wild bird-life and the other wild life of value before he came, he may ascertain just the source of his discouragement and lay the blame where it belongs.

At such a time it is up to Mr. Dry-farmer to enlist the energies of his own family first, and those of his neighbors later, in the cause of saving for coming generations all the valuable wild-life in his midst. And if he complain that he is unacquainted with the differences existing between good and bad actors among the wild folks, he may learn all he desires to know from many and invaluable sources—if he will but take the time to make such inquiries.

Until such a time comes my brother must cheer up, save the birds that love him and make real CONSERVATION his theme in life.

Chas. G. Plummer, M. D.

The Bread That Made
Mother Stop Baking

We've made Royal Table Queen so good that mother can serve the family with the purest, freshest and most appetizing bread, without the drudgery of home baking.



ROYAL
TABLE QUEEN
"The Perfect Bread"



is the bread that made mother stop baking. It is nutritious and economical. Large loaves such as these cannot be produced by the housewife for the same money she pays for Royal Table Queen. The latter is made of a blend of three to four highest grade flours. At your grocers.

Royal Baking Co., Salt Lake City, Utah

MIRTH! MUSIC! DAYS AND NIGHTS OF
CARNIVAL FUN! COME ONE--COME ALL

Festival of the Salt Princess

SALT LAKE CITY
SEPT. 11, 12, 13

Every moment crowded with Entertainment! Thrills Amazement! Enchantment! Something doing every minute! Beautiful parades! Many free attractions! See the carnival grounds! Grand mask ball closing night of Festival.

SEPT. 11 A NEVER-TO-BE FORGOTTEN
12 FESTIVAL. REDUCED RATES
13 ON ALL RAILROADS.

FESTIVAL OF THE SALT PRINOESS

POULTRY

POULTRY HOUSES AND FIXTURES

Harry M. Lamon.

Select a location that has natural drainage away from the building.

A dry, porous soil, such as sand or gravelly loam, is preferable to a clay soil.

In most localities the building should face the south, as this insures the greatest amount of sunlight during the winter.

Allow at least 2 square feet of floor space per bird.

Proper ventilation and sunlight means a dry house and healthy birds.

The partial open-front house is conceded to be the best type for most sections.

The colony plan of housing poultry may be adopted to good advantage on many farms. This system does away with the danger of tainted soil.

The roosts should be built on the same level, 2 feet 6 inches from the

litter in which to scatter the grain.

Cabbages, mangels, potatoes, sprouted oats, etc., make excellent green feed.

When wet mashies are fed, be sure they are crumbly and not sticky.

For the first three days chicks may be fed a mixture of equal parts hard-boiled eggs and stale bread, or stale bread soaked in milk. When bread and milk are used, care should be exercised to squeeze all milk out of the bread. From the third or fourth day until the chicks can eat wheat and cracked corn, commercial chick feed is a good ration.

Plenty of pure, fresh water, grit, shell, and green feed should be available from the first day.

There is very little danger of over-feeding young stock.

Feed the chickens about five times daily and only what they will eat up clean in a few minutes, except at

Nature provides—	Scientific classification.	Poultrymen feed—
Worms and bugs.....	Nitrogenous material or protein	Eggs, meat (green cut bone or beef scrap), milk, or cottage cheese.
Seeds	Nonnitrogenous	Wheat, oats, corn, barley, etc.
Greens	Succulents	Lettuce, cabbage, kale, mangels alfalfa, clover, sprouted oats, etc.
Grit	Mineral matter	Grit and oyster shell.
Water	Water	Water.

floor, with a dropping board about 8 inches below them.

Good roosts may be made of 2 by 2 inch material with upper edges rounded.

The nests may be placed on the side walls or under the dropping boards. It is best to have them darkened, as the hens prefer a secluded place in which to lay.

In order to obtain eggs it is necessary to have healthy, vigorous stock, properly fed.

A splendid mixture for laying hens is equal parts of cracked corn, wheat, and oats, which should be scattered in the litter.

Bran or middlings and beef scraps should be kept in receptacles to which the fowls have access at all times.

Plenty of exercise increases the egg yield.

Provide 4 or 5 inches of good, clean

at night, when they should receive all they want.

Lice and Mites

The free use of an effective lice powder is always in order.

A dust bath is very essential in ridding the fowls of lice.

In applying powder hold the fowl by the feet, head down, and work the powder well down into the feathers.

The free use of kerosene on the roosts and in the cracks will exterminate mites.

Whitewash is very effective against vermin.

Rules

It is urged that all farmers and poultrymen adhere strictly to the following rules in handling their poultry and eggs.

1. Keep the nests clean; provide one nest for every four hens.
2. Gather the eggs twice daily.
3. Keep the eggs in a cool, dry room or cellar.
4. Market the eggs at least twice a week.
5. Sell, kill, or confine all male birds as soon as the hatching season is over.

FEEDING THE FISHES

"Here, what are you doing? Don't you know you're not allowed to take fish out of this water?"

"I'm not taking them out," replied the angler, who had angled three hours without a catch. "I'm feeding them."—Exchange.

THEIR GLEE

"He boasts that he came from a fine old family."

"Yes; and how they must have laughed when he left!"—Judge.

Do not wait until you have used the last Butter Wrapper before ordering more, because it takes time to print them.

Money to Loan On Farms

LIBERAL TERMS

If you need money for additional improvements to buy livestock or any other purpose let us help you.

Because of our long experience in the land business, we are prepared to give you the best service and portection.

Ask any bank in Salt Lake City as to our reliability.

Come and see us or write.

Kimball & Richards

"Land Merchants"

56 and 58 Main Street
Salt Lake City, Utah.

Sunday

and

Week-End Excursions

Via

Oregon Short Line



Travel More
At Slight Cost.

Half Fare
Sundays—
Slightly More
Saturdays to
Mondays.

EACH WEEK

BETWEEN LOCAL POINTS.

This innovation has been established for the purpose of permitting residents in local O. S. L. territory to visit back and forth Sundays and during week ends.

Saturdays to Mondays—

—To encourage baseball games and other sports between different towns.

—To make possible inexpensive outing and fishing trips, and generally to make it possible for our patrons to "get about."

Ask any Oregon Short Line agent for further details, or write,

D. S. Spencer, General Passenger Agent,
Salt Lake City, Utah.

YOUR BODY NEEDS ENERGY

Such as is supplied by sugar which has 98 percent available food energy, more than other staples—that is why you have a craving for sweets, it is nature's demand and sugar is, per pound, one of the cheapest foods that can be secured, substitutes cost much more money.

THE FARMERS' MARKET PLACE

For the Buyer

For the Seller

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

Gem Herd of Improved Chester White Swine

This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions of the World's Fair held at Frisco this last year. Both Sire and Dam, is still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale at all times.

Address

GEO. H. LAWSHE
Falls City Idaho

BATES AND SONS
Provo, R. F. D. No. 1.

Breeders of S. C. White Leghorns and R. I. Red fowls and Airedale Dogs.

UTAH HATCHED WHITE LEGHORN
BABY CHICKS \$11.00 PER 100

Circulars, order-blanks, etc., upon request. Candeo Colony Brooders carried in stock.

GLENWOOD EGG FARM
R. D. 3 Murray, Utah

WHAT DO YOU
WANT
COWS
FOR?
NOT TO
LOOK
AT.



WE
HAVE
THE
KIND
THAT
FILL THE
PAIL AND
PURSE.

A Reg. Jersey Bull from our herd will improve your cows. The home of **TORMENTOR'S DAIRY KING** No. 140206

Breed for production. R. M. test of dam and G. dam averages 828 lbs. of butter in one year.

Write for description and prices to **A. C. ANDERSON & SONS** 2532 Polk Ave. Ogden, Utah

FOR SALE

Two registered Clydesdale mares, three and four years old. One team of draft horses; one driving mare. Call Andrew Knudsen, Supt. Utah County Infirmary, Provo, Utah.

Mention Utah Farmer when you write

BUTTER WRAPPERS

We carry a large stock of the Best Vegetable Parchment Butter Wrappers and Especially Prepared Ink for Printing the same. We furnish them Postage Prepaid at the following Prices, money to accompany order.

100	\$.30
200	\$ 1.25
500	\$ 2.25
1000	\$ 3.00

Send all orders to

THE UTAH FARMER
LEHI, UTAH



Purebred Registered **HOLSTEIN CATTLE**
Send for Free Illustrated Booklets. The Holstein-Friesian Association of America, Box 279, Brattleboro, Vt.

MAKING THE FARM PAY

(Continued from page 7)

nothing to sell, and the stock to which he fed his crops was too poor to give him profitable returns.

The important thing for Baldwin said the demonstrators when they had ascertained these facts, was to weed out his herd, to keep a record of the production of each cow and to get rid of those which were costing him money. The next thing was if possible to rent or buy a little more land so that the size of his business would be more commensurate with its equipment. He and his horses were capable of farming as much land as his neighbors, and by not doing it he was wasting his time, just as his cows were wasting his feed.

Such demonstrations, of course, are valuable only for the community in which they are made. They cannot be taken to mean that it is better to keep eight cows than eleven, to sell crops than to feed them, or to cultivate ninety acres than fifty. They show, however, that there are always profitable and unprofitable ways of running a farm in any community, and that if a man is losing money in return for hard work it will pay him to learn from his neighbors who are making it. It is in helping him to do this that the county agents are now finding one of their most useful functions.

UNCLE EZRA INVESTS IN A COW

Bought a cow t'other day;
Man was getting short of hay,
Rather sell his wife, he said,
Or part with anything he had,
But his hay was getting low,
And the cow had got to go.
"Such a cow," says he to me,
"Is something that you seldom see;
Gives two pails twice a day,
Only eating medder hay.
Give her shorts and cottonseed,
Another pail you'll surely need.
Butter that 'ere cow will make
Can't be beat in all the State.
Her mother took first money at
The Monroe Fair for butter-fat."
I shaved him ten and took the cow
Wish I hadn't done it now.
Felt like I'd been stealing sheep;
'Cause I got that cow so cheap.

Of course it wasn't exactly right
To take advantage of his plight,
But turn it round and I could see
That he would do the same to me.
I took her home and gave her feed
Of ensilage and cottonseed.
Could hardly wait for milkin time,
So as to try that cow of mine.
I won't attempt to express my thoughts
But all I got was just three quarts.
But he told the truth when, says he,
A cow like this you seldom see.
For her bag was bigger when I got
done

Than it was before I had begun;
But strip and strip it was no use.



THIS YEAR IS THE YEAR TO BUY HOGS—

last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again.

The best time to buy is when pigs are young. Write today.

RICHARDS LIVESTOCK CO.
Virginia Idaho
Jesse S. Richards Mgr.
(The West's best Durocs)



BALLAMOAR FARMS

has for sale

AN ATTRACTIVE FOUNDATION HERD OF REGISTERED JERSEYS
9 Cows and a Bull

Rapid natural increase causing overstock makes a sale necessary.

The Bull—**GUENON'S CHAMPION BELMONT**—is 11 months old, thrifty, has straight lines and good capacity, and will make a show animal. His dam has a '500 lb. R. of M. record. His sire is Belmont's Champion Lad, the sire of many prize winners. Two of his daughters have produced over 600 lbs. of butter in a year.

The cows are not culls but are richly bred and of good dairy type. They all have daily records of milk production.

Write for particulars or call and make your own selections.
Richmond CAINE LIVESTOCK COMPANY Utah

OPENED JAN. 1ST, 1913



"The HOTEL that's BEST
In all the WEST."

WHEN IN LOS ANGELES

STOP at the NEW
FIRE PROOF

HOTEL NORTHERN
EUROPEAN
200 OUTSIDE ROOMS
150 WITH BATH
420 W. 2ND ST., NEAR HILL
NORTHERN HOTEL CO., PROP.
FRANK L. CRAMPTON, MGR.
RATES \$1.00 PER DAY AND UP

There wasn't another drop of juice.
Next cow I buy I will not fail
To inquire the size of the milking pail.
—Exchange.

THOSE IRRITATED WESTERN STATES

On the train going West last summer the little old lady beside me became dreadfully bored by the unending acres of alfalfa that we passed.

"Now, ain't this land the limit," she finally observed; "all they can raise is alpaca, and they have to irritate that!"
—Exchange.

A man without a temper is not worth much. Keep your temper—don't ose it.—Exchange.

RAINFALL IN RELATION TO DRY-FARMING

(Continued from page 3)

to be used because shallow soils or ones broken by gravel or hardpans prevent root development and free movement of moisture.

8. Small profits from each acre of large tracts make comfortable incomes.

9. Machinery and animals necessary for rapid cultivation of large acreages should be available.

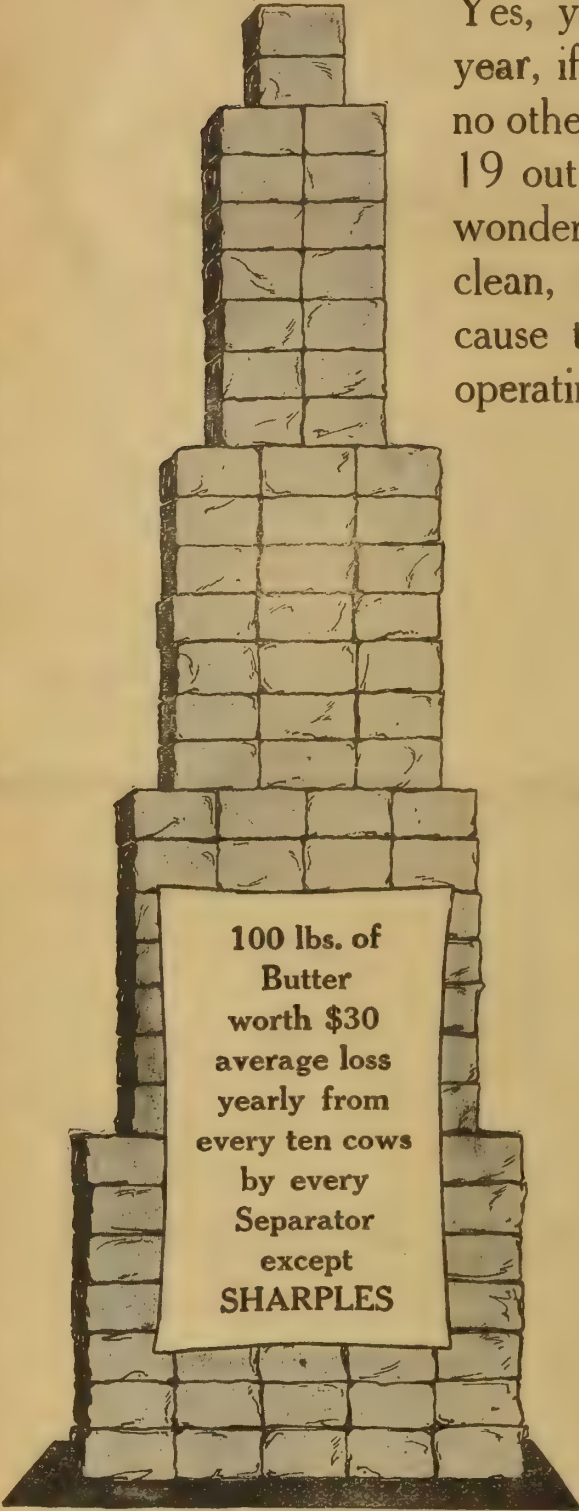
10. Man controls the whole situation by thin seeding at the proper time, and on good seed-beds. This prevents more plants from beginning life than can mature with the water available.

Lost 100 Lbs. of Butter

Yes, you certainly did lose that \$30 worth of butter last year, if you milked ten cows and did not use a Sharples. For no other separator skims clean when you turn it too slow---and 19 out of 20 people do turn too slow much of the time. The wonderful new Sharples is the **only** separator that skims, clean, regardless of how fast or how slow you turn it, because the "suction feed" makes the milk feed vary with the operating speed. The

SHARPLES SUCTION-FEED CREAM SEPARATOR

Will Avoid This Loss



100 lbs. of
Butter
worth \$30
average loss
yearly from
every ten cows
by every
Separator
except
SHARPLES

Will save you the pile of butter illustrated, over every other separator. The figures are based on proven facts taken from Purdue Experiment Station Bulletin 116, which sets forth the great loss of cream from turning ordinary separators below speed. The Sharples is the only separator that delivers even cream, too, at all speeds. Ruggedly built for hard service. Over a million users. Send for catalog to Dept. 104.

We also make the SHARPLES MILKER—the only milker using compressed air (broadly patented) which gives the good, firm squeeze that keeps the teats healthy. The only milker instantly adjustable to big-teated and small-teated cows—just turn a lever. One man can milk 30 to 40 cows per hour. Used on over 300,000 cows. Send for catalog

SHARPLES FARM GASOLINE ENGINES—the highest grade farm engine buyable. Two complete sparking sets—no ignition troubles in damp or frosty weather. 2½ to 9 H. P. Catalog free.

Sharples Separator Co., West Chester, Pa.

JOBBER FOR UTAH, A. L. BREWER DAIRY SUPPLY CO., OGDEN, UTAH.

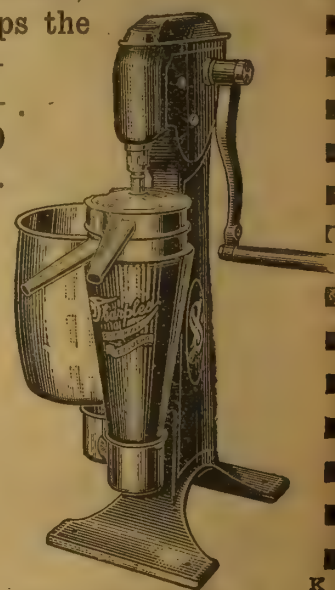
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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 6

LEHI AND SALT LAKE CITY, UTAH

SEPTEMBER 9, 1916



AGRICULTURAL LESSON

Prof J. C. Hogenson.

Alfalfa.

Alfalfa or lucern is a legume, and a very important one for the West. It is very rich in protein or the flesh producing substances, and is therefore an excellent feed. About 60 per cent of the nourishment of alfalfa is in the leaves so that our hay should be handled in such a way as to lose as few leaves as possible. To obtain the largest yield of the most nutritious hay the alfalfa should be cut when from one-tenth to one-fifth of the blossoms are out. At this time the alfalfa contains the largest percent of soluble nutritious matter. Alfalfa is not adapted to all soils and climates. It thrives best on a lime stone soil where the moisture can be controlled and where it can get a maximum amount of sunshine and a minimum amount of shade.

Under Utah conditions alfalfa is best seeded in the spring alone when danger from frost is over. Under irrigation it may be seeded at the rate of about 15 pounds per acre, and under arid farm conditions at the rate of from six to eight pounds. It is best seeded with a press drill. The first season the field should be cut several times, which stimulates the growth of the plants. Discing is beneficial in that it loosens up the soil, forms a mulch and also splits the crowns of the plants so that the stand is thickened. An alfalfa cultivator is more effective in doing this than is an ordinary disc.

Alfalfa should be cut when it begins to bloom because at that period of its development it contains the highest percentage of digestible mat-

ter pound for pound and consequently makes the best hay.

Colorado reports the following losses by allowing the hay to remain in the field:

Hay gathered as soon as possible and put into the barn in perfect weather, loss 5 per cent.

Hay allowed to remain in the field a week after cutting and a small shower falling upon it, loss 10 per cent.

Hay allowed to remain in the field 15 days after cutting and becoming bleached and having a heavy rain soak through it, loss 27 per cent.

One of the worst alfalfa pests that we have is dodder or love vine. This is a small parasitic annual plant which entwines the alfalfa stems with its slender yellow or orange colored stems and thus gets its food from the alfalfa plant. It grows from seed each year. As soon as the young plants get above the ground they immediately attach themselves to the alfalfa stems in the neighborhood. As soon as this has been accomplished, their connection with the ground ceases. They attach themselves to the alfalfa stem and so it gets its food. It may be killed by preventing it from seeding. Cut it as near to the ground as possible and allow it to remain where cut until dry, then cover with straw and burn.

For the control of the alfalfa weevil secure copies of bulletins and circulars published by Utah Experiment Station, Logan, Utah. The bulletins are free for the asking.

"Sometimes" said Uncle Eben, "a man gits de notion dat he's upliftin' de human race when he's only tryin' to boss it around."

HOW LARGE A FARM BUSINESS BRINGS THE MOST PROFIT

It depends on the man, the kind of farming, and the quality and price of the land, the size of farm business has a great deal to do with the profit that results. It is true that there is no size, either of farm or of farm business, that is best for farm conditions for all men. Some men can manage much larger farms than others but a moderate size of farm business is more likely to succeed in the hands of the average man than one extra large or small. This is the result secured in a farm management survey. The size of farm business instead of size of farm was studied because it counts for more and because it might be possible to find a farm of 30 acres on which the farm business would be much larger than on another farm of 300 acres.

The farm organization should include plenty of land, plenty of labor, and a fair amount of working capital and they should be in the right proportion.

One group of men on 160-acre farms made more money than another group on 500-acre farms, largely because the men on the larger farms were owners who did not feel the need of working very hard and consequently made much less money than their industrious neighbors, struggling upward on smaller farms. Crop yields measure the quality of the land and go a long way toward determining how profitable the farm is to be. One group of men on 260-acre farms made less than another group on 100-acre farms, not in this case because of difference in ownership but because those on the larger farms had so much lower yields that they were much less profitable. This must not be taken to indicate, however, that the yields were

smaller on the larger farms, for in general the reverse was true and the larger yields per acre were found on the larger farms.

We frequently hear the statement that land is so high now that it is impossible to make profit on it and the men on the high-priced land in the county seemed to be finding that true. While the yield and quality of the land did vary, they did not vary as much as the prices. That is, they did not raise as fast as the price of the land. While the better land paid better rates up to \$80, the increased value of higher-priced land made the interest charge so high that it was much harder for the farmer to make wages or any kind of fair income on the high-priced land.

The most successful farms included in the survey were those which had about four-fifths of the investment in real estate and four-fifths of the remainder in live stock, leaving only four or five per cent or about one-twentieth of the whole investment for machinery, feed, and cash on hand.—O. R. Johnson, Missouri Agricultural Experiment Station.

KEEP SMILING

Some German friend contributes this to the cheerful literature of the day: "Schmile und the world schmiles mit you; laugh, und the world vill roar; howl, und the world vill leaf you, undt nefer come back any more; for all of us couldn't peen handsome, nor all of us wear good clothes; but a schmile vas not exbensive, undt cofers a world of woes."—Imp. & Vehicle Record.

Do not allow a weed to mature in the garden or in the place where the garden is to be made next year.

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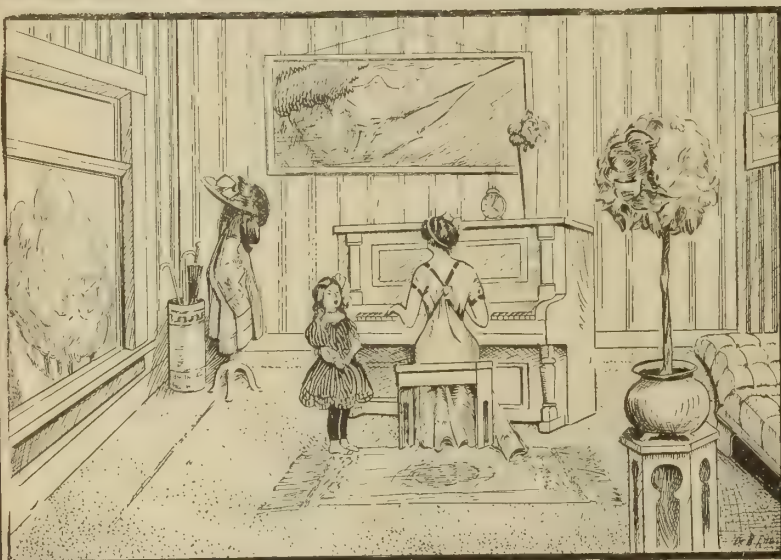
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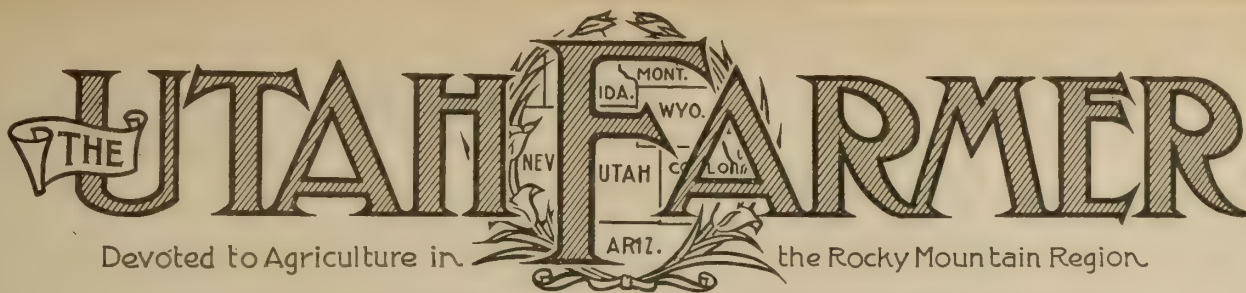
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VOLUME XIII.

LEHI, UTAH, SATURDAY, SEPTEMBER 9, 1916

No. 6

Indifference and Energy

By Ben R. Eldredge.

A few years ago a small community within easy shipping distance of Salt Lake City were producing from 500 to 600 gallons a day of market milk. The individual producers joined in a general movement favorable to the production of good milk. Stables were improved, with cement floors, and better lighting; and the milk that came from that little community was rated by the health officials as high quality.

Recently I learned that instead of nearly 600 gallons a day, less than 60 were now being received from that locality. I took an opportunity to visit them. I could not call on all of the farmers but some of those that I saw had much complaint to offer. They complained of the market not being right, and of hay being high. I was not there for controversy or argument—but for observation and to learn of local conditions. Here, I will mention a few of the things that I found to exist:

The alfalfa weevil had taken the lucerne, the farmers were submitting to the weevil and doing nothing to check it or overcome it. The price offered by the market milk dealers in Salt Lake City was just as good as it was six or eight years ago; shipping facilities were better than they had ever been; and when I went out to look at the cattle I found a few old cows that had been excellent producers; I found some six to eight years old that were fair; I found heifers two and three years old that were less than ordinary; and found scrubby red bulls heading the herds. In other words, I found that the cattle that were producing milk in that vicinity today were far, far inferior to the cattle that had produced it ten years ago. There had been a most decided deterioration in the quality of dairy cattle in that vicinity. I found no one who was keeping records of his individual cows; I found no one who could give me a satisfactory reason for the general discontent. Many complained on the market—but the market was as good as it had ever been—and years ago they all had done well in milk production.

There was one man in this community different than the rest. He did not have individual records of his cows but he told me that from twenty cows from January 1st to July 1st, 1916, he had received \$762.66 cash for their output. He had also had his own table well supplied with milk, cream and butter. His family is a large one. He told me that last year he had largely supported his herd from dry-farm corn fodder. While he had not accurate figures he had in his own way a record of his affairs. He told me that on 70 acres of dry farm he gathered 700 dozen bundles of corn fodder. This was cured in the field and after-

wards hauled to his hay barn. I cite this as one instance where a man had altered his method to meet conditions that had developed. This man was a hard worker and while he thought conditions were not what they might be he was not filled with bitter complaint. I talked with him about building a silo as a means of getting better results and a more economical feed from his corn fields. His own observations had converted him to this but conditions had not been favorable to silo building but his plans were that by another season he would have one on his farm. This man was experimenting with Sudan grass thinking that he might in this find a substitute for "high priced hay." I think, also, that he may find a place in his scheme of crop rotation where the Sudan grass will fit in. I did ask one man in this community when he was complaining of the low price of dairy products and the high price of hay what live stock they could feed the high-priced hay to at a profit and received the answer: "Why, we haven't got any hay." Now, right off in another corner of that same county, where the weevil made its appearance almost at the same time as in the community I have just mentioned, men are fighting the weevil. They have cut near two tons of lucerne per acre, first cutting, and a good ton and a half per acre the second cutting, and have a good prospect for a third cutting, and the work that has accomplished this amounted to less than a dollar an acre. Of course, I am referring to the work done in combating the weevil.

In a town half way between these two communities I found a man who had two years' experience with a silo, which I helped him erect in the summer of 1914. It was the first one in that part of the state. While erecting the silo I talked to him about his cows, urged him to keep records and cut out those that were not producing well enough to give him a profit. On my recent visit I found this man irrigating a splendid field of corn that would soon be ready for the silo. He has no pastures but has a piece of rough ground shaded with box-elder and cottonwood where he turns his cattle. He feeds some hay right through the summer season but cuts green lucerne, green corn, Sudan grass and any other crop that his experience has prompted him to use for soiling purposes. He showed me his cattle, a clean-cut dairy herd, not a "border" in it, and he told me what each cow had produced the past year in pounds of milk and pounds of butter fat. He was keeping record; his herd was improving and it was headed by a pure-bred dairy bull who was proving to be a very successful sire. For a long time this man had sold his product on the general market but thinking he could do

Value of Concrete Roads

W. F. Long.

The purpose of a road is to provide the shortest and easiest possible means of passage between different points.

The earliest roads of history were the great highways for war and commerce extending into districts not readily accessible by water. Most of these, however, were merely foot paths, until the Carthaginians began and the Romans developed the science of road building. The best of these Roman roads were three feet thick, laid in four courses. A foundation of large flat stones laid in lime and broken stones in the proportion of about one to three. On top of this was placed another layer of concrete, which was not tamped and which was a mixture of old building materials and hot lime. The wearing course consisted of irregular shaped flat stones, about six inches thick, carefully fitted and laid in lime mortar. This form of construction was undoubtedly not the first method used, but was the result of much experience.

With the fall of the Roman empire came a decline in road construction, and for several centuries no further attempt was made to improve highways. The revival of paving came in the building of streets in the larger cities. This was followed by the improvement of through routes between the centers of population.

It was not until the latter part of the 18th century and the early part of the 19th, that a truly scientific attempt was made at road building. The methods employed during that period are in use today, in slightly modified form, in our country and village roads.

The decided change in the mode of transportation on our highways during the last few years has necessitated new methods of construction. The lasting quality of a macadam road depends greatly upon the natural cementing value of the stones composing it. Until the advent of the automobile, the binding material of the surface was disturbed by the horse's shoes and blown away by the wind; more binder was then chipped of the stone, compressed by the steel

better had taken pains to produce a superior article and was now placing it in a lump with a private customer, at a little better than the regular market rate. This man had no fault to find with dairying; he went into it as a means of providing fertilizer for a large fruit orchard and he had developed the dairy end of his business so that now, even should a dull fruit season overtake him, his dairy herd will carry him through.

There is no way of "getting rich quick" in dairying. It is not a lazy man's business. It will suffer from indifference and will reward intelligent attention and energy.

tired vehicles and reformed by absorbing moisture from the atmosphere. The automobile prevents this remaking of the binder. The action of the rear driving wheels displaces not only the surface binder but the road materials as well, scattering them beyond recovery.

When this occurs, rain penetrates the road and softens the base and foundation. The road in turn settles, breaking the bond and thus permitting the loosened stones to be displaced.

In order to prevent these defects a permanent binder, such as cement, must be incorporated with the other road materials. The most exact and economical method of combining Portland Cement with the materials at present used in road construction, is to mix it with them, forming Concrete.

The first and most important essential for a successful pavement is a firm and un-yielding sub-base. Since all the loads brought upon the surface are transferred to the base, that base must be in a condition to sustain these loads; that is, it must be dry and thoroughly compacted, and it must not contain any vegetable, perishable or yielding matter.

A proper and lasting sub-base can be secured only by keeping out moisture. Drainage must be established so as to facilitate the bow of water away from the sub-soil and even from the side ditches as quickly as possible. The sub-base must be dry, fairly hard and un-yielding, or no material placed upon it will prove satisfactory in giving low cost of maintenance and long life.

Upon such a well prepared sub-base is laid a foundation for the wearing surface. Virgin rock, of course, makes the best foundation, but it not being always possible to locate a highway upon solid rock foundation, we naturally turn to concrete, for what material approaches more closely to solid rock than does concrete, what material can so successfully bridge over the inequalities which will in turn develop in every sub-base save that of rock, no matter how well it may be rolled and otherwise prepared? The concrete must be properly proportioned, well mixed and laid smooth to conform to the grade of the finished pavement. Concrete properly proportioned and mixed is impervious to water—a most essential feature for a "wearing surface foundation." Water cannot penetrate to the carefully prepared sub-base and destroy it, rendering it unfit to sustain traffic. Concrete will not only sustain the pressure imposed upon it by traffic, but will distribute the same over a considerable area, thus much reducing the load to be carried by the sub-soil. This characteristic of concrete makes

(Continued on page 7)

DAIRYING

HOW BANKERS ARE HELPING DAIRYING

Dean H. J. Skinner of Purdue University, Indiana, in speaking to the Illinois Bankers Association, said:

"I believe that the time will come when our larger banks and many of our country banks cannot afford to be without a man trained in Agriculture, who not only looks over farms to see what they are worth but who is in a position to give farmers information which will improve the farms, and enable them to make use of money or credit."

Dean Skinner did not say this in the interest of the banker particularly. He had in mind the interest of the farmer, as well.

A very prominent Utah banker was heard to say recently that in his judgment it would be a splendid thing for the bank of which he was an officer to employ a man who would be known as a live stock expert, whose duty it would be to pass judgment on live stock loans, and in connection with this work spend considerable time in developing live stock interests.

That banker has an up-to-date idea of the function of a bank. Dean Skinner is known for his aggressive ideas, and when he suggests that it would be a good thing for bankers to get close to the farmer by means of an employee who is trained in agriculture, he knows what he is talking about.

Mr. Merrill made the suggestion at the recent conventions of the State Bankers' Association, that it would be a good idea for the association to create a fund to be used in the employment of a man who would devote his time to the development of the live stock interests of the state. This suggestion was made because the plan has been adopted in a large number of places and the results have been very satisfactory.

Some banker might get the idea that these suggestions coming from outside the banking fraternity infringe upon his business. He may go so far as to resent them and give expression to the idea that he is capable of running his own business, but even if he does the value of the suggestion is not in the least impaired.

It is not intended that bankers should teach farming, or that they engage in the actual business of farm-

ing. The real fact of the matter is that bankers are teaching themselves and becoming more efficient bankers when they get outside of the routine of strict banking practice, and take an active interest in the development of the Agriculture of the community in which they live.

Some one has said that the banker is the "balance wheel" of the community's financial welfare. Some bankers are real balance wheels, but some are the real brake blocks of community development.

The First National Bank of St. Paul, Minnesota, employs a Live Stock Expert. He spends his entire time in the interest of live stock development. His services are to be had for the asking, whether the applicant is a patron of the First National Bank or not.

The Stillwater, Minnesota, National Bank employed a former county agent to devote his time to the work of developing a more profitable Agriculture.

The Plymouth County Trust Company of Brockton, Mass., employed an Agriculturally trained man. He works with the boys and girls Clubs, and determines whether the loans made by this company are used in a productive kind of Agriculture.

The bankers of Texas were largely responsible for the employment of 100 county Agricultural Agents.

Bankers in practically every state in the Northwest have loaned money at a lower than customary rate of interest and for a longer than the usual time, with which to buy dairy cattle and other classes of live stock.

A banker in Dillon, Montana, subscribed for one of the best dairy publications in the country and had it sent to 200 farmer patrons. His idea was to get the farmer and his family to thinking about the dairy business.

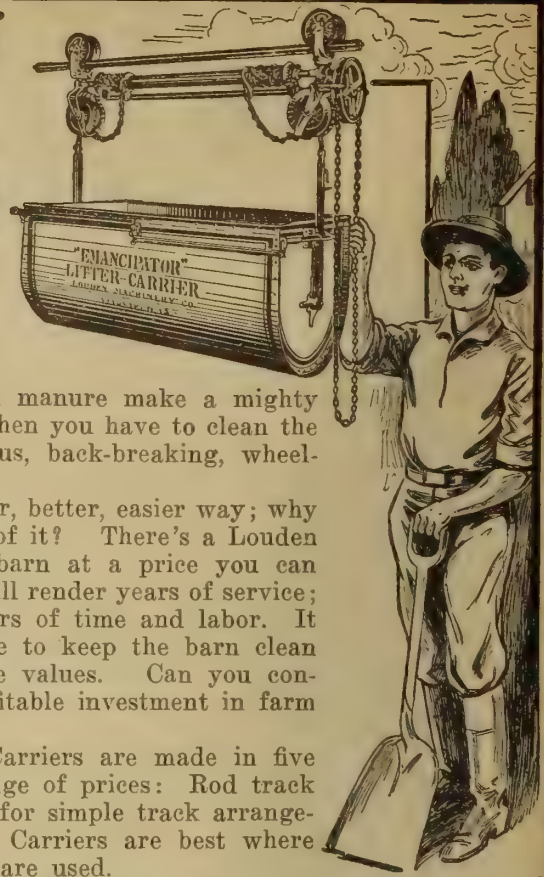
The bankers' farm bulletin has become popular with both bankers and farmers. The bulletins are usually prepared by men of the colleges or of the Department of Agriculture at Washington and printed in large quantities by the bankers' state associations, the banks subscribing and circulating them among their farmer customers. Nearly 100 banks in Wisconsin are putting out thousands of them monthly. They cover one subject only, something of particular interest to the farmer at just the time he receives the bulletin. Some banks are editing and publishing their own monthly paper. The First National Bank of Joliet, Illinois, is one of the best known banks doing this. The Lancaster State Bank of Lancaster, Wisconsin, is another. It is becoming common for banks to send out special letters on farming.

At Clinton, Wisconsin, a banker was very much concerned last fall over the hog cholera epidemic. At a meeting, attended by many farmers and men from the college of agriculture, some real live hogs were vaccinated. Farmers who had not believed in the treatment were converted and the disease was checked.

KEEP THE CALVES I. D. O'Donnell.

If you profit by the experience of those who have been "through the business slowly, "grow into it rather than go into it." Also you will find there is no better plan than that of raising your own dairy stock.

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Mud, slush, and manure make a mighty nasty combination when you have to clean the barn by the laborious, back-breaking, wheelbarrow method.

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Louden Litter Carriers are made in five styles, at a wide range of prices: Rod track carriers are suitable for simple track arrangements. Solid Track Carriers are best where curves and switches are used.

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The idea of a great many people is that when they get matters fixed just right they will buy up a good bunch of dairy cows and from then on their principal occupation will be cashing cream checks. The majority of men successful in dairy work did not succeed by any such plan. As a matter of fact, most of the failures in this work have been men who started out with an unknown bunch of cows that other people were glad to dispose of.

The right way is to start with one, two, or three really good cows—know that you are getting something good even though it costs considerable extra. Use the best available sire on these good cows and keep the heifer calves.

On the average when you buy a dairy heifer you pay the other man a profit over what it has cost him to raise the heifer and still you don't know just what you are buying. It averages cheaper and safer, therefore, to raise your own dairy heifers.

Several of the State experiment stations have experimented and given out figures on the costs of raising dairy heifers. The costs as given out in the bulletins are surprising in that it is shown that it costs as much as \$60 to \$70 to bring a heifer up to 2 years of age. These figures have discouraged many farmers from endeavoring to raise their own heifers; they reckon they can buy the heifers at 2 years of age cheaper than they can raise them and they take no risks of loss in the raising. This would be good reasoning if farmers were in the habit of utilizing every item of what is raised on the farm and also if they could be reasonably sure the dairy heifers they can buy are worth anything at all above their value as beef. On the average

farm the feed necessary to raise two or three heifers is not an important factor, as the average farmer wastes several times that amount every year.

It is a recognized fact that the value of a dairy cow is governed largely by the care and skill used in bringing her to the productive age. It is not enough that the heifer merely lives through the first two years. It is very important that she be kept in prime



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condition throughout this period and that she be handled in such manner as to insure her development into a cow of good disposition. Here lies the great advantage in raising your own dairy stock. Bring them up in the way they should go and they will not depart therefrom. Do not get worried about what it costs to raise dairy stock; you can raise them for your own use better and cheaper than anyone else if you use good judgment.

There is one best way to get into the dairy farming work. Start with one, two, or three good cows, use a good sire, and keep the heifer calves.

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LOOK UP THE BLOOD LINES OF THE BULL

By W. H. Underwood.

Everyone knows that in successful dairying a very important feature is to use none other than the best sire obtainable. In his selection, as in other things, there are always various conditions to be considered. Very many set rules cannot be laid down that will cover all cases, but there are a few essential features which must always be looked for and can be observed no matter what breed or what particular kind of an individual one may want.

In the first place, he should be of a distinct breed as we can never get anywhere by breeding to anything but a pure bred sire. Secondly, he ought to be in good health and of good general dairy conformation. Next he should be from good producing ancestry.

Then one should strive to get an animal that shows strong points where the cows show weak ones as it is in this way that one can best get at correcting the faults in his herd. For instance, if the cows are generally poor testers a sire should be obtained whose ancestors have been high testers or if the cows are generally small and fine boned a larger and coarser boned sire will be necessary. Then, too, the bull ought to be true to his breed type as far as possible. Unless he is the getter of good progeny he is not wanted and for this reason if one can get hold of a bull that has daughters in milk that have proven good then he knows what he is doing.

There is some prejudice against the use of old bulls and it is well to be a little careful about buying them, but if they are not too old for service and are still sure I do not see any objection to them except that they might be ugly, but on the other hand many of the young fellows will soon become so. One must be prepared to handle vicious bulls if he is going to stay in the business as they often prove to be the best of sires. I once heard a prominent breeder express himself as having no use for a vicious full, but when he afterwards found that some of the greatest sires were ugly fellows he said that he would have to take back his statement. There is nothing to be lost in purchasing an old bull if he is a good one and a sure breeder and can be obtained at a reasonable figure.

It is a good plan to have the bull looked up some time before he is needed. It is much better to have to feed and care for an extra sire for a while than it is to get caught without one or have to use an inferior one.

In buying a bull it is well to speak ahead for the animal. In other words, one should look up the ancestors he likes and speak for their progeny, but if he buys him in this way he should arrange for the animal to be cared for properly until he can get him and then as soon as convenient and practicable get the animal under his own care and feed him well and handle and develop him according to his own ideas. And in doing so one should keep the youngster under his own control at all times. He should be handled a good deal and in such a way that he can be caught and led around at any time.

When the bull is old enough for service a ring should be put in his nose and his handling be done with a strong staff as it is best not to trust such an animal very far, no matter how quiet



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he may seem to be.

In general, I believe people do not spend enough money for their bulls and what they do spend is not usually spent judiciously as they do not investigate the breeding closely enough before buying. Many will purchase a bull for his markings or for some other unimportant characteristic. When I buy a bull the only records I consider very strong are the annual ones. I want the dam of my bull not only to give a good flow of milk and test well but also to be a persistent producer.

Idaho Cattle Ranch

395 acres all in hay and grain, free range, all machinery needed. Cuts 350 tons of Hay and any amount of grain. A bargain for \$9,000 complete. Write us.

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PREPARATION OF SMALL

GRAIN EXHIBITS

The use of better seed offers one of the most effective methods for increasing the yield of farm crops. The work of seed improvement associations and individuals who carefully select their own seed, has resulted in the general use of better seed. Competition in producing and displaying crop products of high quality at agricultural fairs is another influence which should have an increasing benefit on the quality of seed planted. The influence for better crops resulting from fair activities would be greater if more persons exhibited their products and if greater care would be taken in the selection and preparation of exhibits.

A creditable exhibit of field crops should contain products which are typical of the district they represent. The crops comprising an exhibit should be harvested when in prime condition and should be of superior quality and worth. They also should be properly and tastefully arranged when placed on exhibit.

Seed Grain—Wheat, Oats and Barley. Grain prepared for exhibit should be true to variety name. It should be harvested when it is mature but not over ripe. It should be threshed as early as possible after harvest. Rain and other conditions of weather may cause discoloration. Usually grain should be recleaned in order that all chaff and foreign matter may be removed. It should also be graded to remove very large and undersized kernels. Unless the rules of the fair specify otherwise, the samples should consist of one peck.

Sheaf Grain—Wheat, oats and barley should be harvested for sheaf exhibits as soon as the crop is mature and before it is thoroughly dry. Better exhibits will result if the grain is pulled and suspended by the roots until dry. At the time of preparing the exhibits the roots should be cut off and only those stalks which have full length of straw and well developed heads should be used. The grain should be bound in sheaves about four inches in diameter and tied in two

places. A tape should be used in tying the sheaves as it is less likely to injure or break the straw than string. Black or white tape is to be preferred and fancy ribbon should never be used in tying the sheaves. If the leaves are removed from the stems the exhibit will have a neater appearance.

FALL SUGGESTIONS FOR BULBS

Bulbs may be planted outdoors any time from September until the ground freezes.

The bulbs should be placed from one to four inches below the surface according to the size of the bulbs. A good rule is to cover the bulbs with earth one and a half times their own depth.

In autumn when the ground is frozen tolerably hard the bed should be covered with 3 or 4 inches of leaves or straw, this covering should be removed gradually in Spring as the weather becomes warm.

Indoor Culture.

Bulbs for Winter blooming may be planted in pots or pans from September to November, the earlier the better. After potting, they should be watered well and be placed in a cool, dark cellar. The whole success of pot culture depends upon getting the roots well established at a low temperature, before the tops are allowed to start. In six to eight weeks the bulbs usually have made sufficient root growth to allow them brought to the light. A continuous supply of flowers can be had for months by bringing a few pots to the light every week or so.

To Grow Bulbs in Moss-Fibre, in China Vases or Bowls without drainage.

This is the best and most charming way to grow winter-blooming bulbs for house and table decorations and far better results are obtained in this way than by using pots with earth.

The advantage of this system is, that the receptacles can be placed anywhere about the house, in the drawing room or dining room without the slightest risk of injury. The moss-fibre is clean to handle, perfectly odorless, and remains sweet for an indefinite period.

Any non-porous receptacle can be used for that purpose but it should be suited to the size of the bulbs to be planted in it. The bulbs are potted the same way as in ordinary soil just showing their tops. It is not necessary nor desirable to press the moss-fibre tightly, otherwise the roots do not work freely and the bulbs will push themselves upwards. Once potted, they require hardly any attention only great care should be taken to keep the moss-fibre moist but not too wet.

After the bulbs have been potted they should be kept in a dark, cool and airy room until the roots have formed, and then brought into the light. All bulbs can be grown in Fibre.

MAN WANTS BUT LITTLE.

It was in the far South.
"How's times?" asked the tourist.
"Pretty tolerable, stranger," responded the old fellow who was sitting idly on the stump of a tree. "I had a pile of brush to burn and the lightning set fire to it and saved me the trouble of burning it up."

"That was good."
"I had some trees to cut down, but the cyclone leveled them and saved me the trouble."

"Remarkable! But what are you doing now?"

"Waal, stranger, I'm waiting now

for an earthquake to come along and shake the potatoes out of the ground.

Practically all fruit is selling at a good price this year. Hand pick apples. Grade and pack them carefully.

TRUE ECONOMY

CHEAPNESS

is not based on what you pay but on what you get for what you pay. That's why you should buy

SCOWCROFT'S

NEVER-RIP Overalls and "MADERITE" Shirts

TRY THEM. They will give you more comfort and service for your money than any others you can buy.

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and they always give Satisfaction

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The Utah Work Clothes
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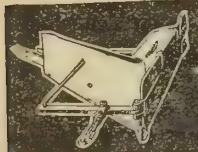
If you're a man of energy and business ability, here's an opening worth consideration. There is a great demand for drilled water wells, and there's large sure profits to the man with a

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324 Evans Block, Denver, Colo.

VALUE OF CONCRETE ROADS

(Continued from page 3)

possible the laying of a pavement upon many sub-soils, the cost of the preparation of which would be prohibitive, were concrete not used. A concrete foundation when once laid will give an asset which be counted on for all time, while a broken stone foundation is necessarily of a more or less temporary nature, owing to its displacement under travel and its disappearance into the soil which supports it. The success of those city streets which have stood so many years with little cost of maintenance under heavy traffic conditions, can be traced directly to the well built foundations of concrete.

The traffic upon highways is increasing yearly. Each year highways are subjected to constantly increasing loads. The public demands rapid transportation, and quick delivery of goods. We must get there at any cost. Such are the demands of progress. Some keenly thinking individual decried progress as the measure of man's ability to shorten the minutes between mile stones. What a far reaching definition that is. It leaves nothing uncovered. In consequence thereof, the nature of traffic is rapidly changing from horse-drawn to motor-drawn vehicles. Moreover, the public demands that all un-improved highways be surfaced, and that these surfaces be kept in good condition. Indeed the demand for good roads is the very spirit of the Twentieth Century, the unpassioned cry of the age! If roads be built in accordance with the ordinary methods of country road construction under these new conditions of traffic their life is short and their cost of maintenance is not only excessive but prohibitive!

With a little more care in construction, the concrete foundation, which is essential to every wearing surface, can be allowed to take the wear itself, thus giving a permanent pavement at low cost.

This use of concrete as a wearing surface, as well as a foundation, makes possible permanent highways, where otherwise the cost would be beyond the financial resources of many communities.

Concrete possesses all the essentials and fulfills all the requirements of a good pavement. The pavement holds the aggregate in position so firmly that the action of the most rapidly moving vehicles will not dislodge it. Wear under iron bound traffic is scarcely perceptible.

Therefore the length of service obtained and lack of maintenance charges, as well as the cheapness in cost (\$12,000.00 per mile for a 16 foot width being an average figure) permit the taxes to be used for the construction of new roads, rather than putting them into the maintenance of those already built.

A very light transverse grade is required to make the road self cleaning and to carry the surface water to the side gutter or ditch. In roads requiring a higher crown for drainage, gravel takes the center of the road, so that all the wheels may be at about the same height. On concrete roads, due to their flat slopes, traffic is not forced to the middle of the pavement, it can comfortably keep to the side, and thus avoid danger in passing over vehicles.

Upon the smoothness of the road depends the cost of comfort of travel, and the price of marketable product to the customer. Concrete may be made as smooth as is desired to allow

the proper foot hold for horses, thus giving the least resistance to traction, with the consequent quick and cheap delivery of goods and the pleasure of the traveler.

The bulk of the materials from which good concrete is made can be found in nearly every locality. Where the sand, gravel and stone are to be had from local pits and quarries, the normally low cost of concrete roads can be still further reduced by the use of these local materials, with a consequent saving of freight charges.

Most of the labor for the preparation of the materials and placing of the concrete can be secured in the locality in which the road is to be built. By the utilization of home products and home labor, the money expended on a concrete road remains in the community paying for it.

Bond issues are required in many cities and townships to obtain the necessary funds for pavement and road construction. Unless concrete is used for the work the pavements are entirely worn out long before the bonds mature. The result is that the public must either increase their bonded indebtedness or suffer the inconvenience of using bad highways. This inconvenience will reduce the earning capacity of the community and the value of the adjacent property.

Today, in the United States, there are over 51,000 square yards of concrete pavement, and amount sufficient to pave a road sixteen feet in width for a distance exceeding five thousand miles. The first pavement laid was in Bellefontaine, Ohio, a town of 8000 people, twenty three years ago. That pavement laid under conditions governed by no previous experience when the use of concrete itself was in its infancy, and which today is not only in existence but giving good service,—is a striking measure of the possibilities of this type of pavement construction.

When I tell you that the average amount expended per mile per year for maintenance and repairs of macadam roads during the last seven years in the states of Connecticut, Massachusetts, New Jersey, New York and Rhode Island was about \$650.00 as compared with \$28.00 per mile per year average for 51 miles of concrete roads built prior to 1913 in Wayne County, Michigan, it is little to be wondered that the concrete pavement is rapidly gaining so much favor in all parts of the country. Personally I believe that this type of pavement is the crowning achievement of the entire road building science.

TRUTH

When you start to advertise,
Stick to facts!
Good business isn't built on lies—
Stick to facts!
No matter what you have to sell,
The truth is good enough to tell;
Boost your goods, and boost them we'll,
But stick to facts!
When tempted to exaggerate,
Stick to facts!
Tell the truth; don't overstate—
Stick to facts!
If the truth is not enough,
Something's wrong about your stuff
Anyway, don't try to bluff—
Stick to facts!
Makers, merchants, middlemen,
Stick to facts!
Pick your points with pungent pen,
Stick to facts!
Though others make their figures lie,
Boasting of their values high,
Causing trade to pass you by,
You stick to facts!

—Canvassers' Magazine.

Why Drill Planting Wins



Empire Jr.,
Hoosier and
Kentucky
Grain Drills

THERE is nothing mysterious about the way Hoosier, Empire Jr. and Kentucky drills have been crowding out the broadcasting method of seeding. They give bigger yields of better grain.

These points are clearly seen: Drills save seed at the start, because every individual kernel is planted right, with covering enough to protect it from cold or drouth. You needn't "play safe" by planting an extra quantity, for every seed has its chance. Drilling means regular planting, no bunching here and lack there—every seed has sufficient ground to support it. The seed starts, grows, and ripens all together. Uniformity—that's the word. Drilling does away with uneven stand, with half-ripe, half-green fields. Drilling gives you the maximum in grain, kernels all filled out and plump. That means top yields, top prices.

When you buy a drill, buy a Hoosier, Empire Jr. or Kentucky drill. Ever since 1857 the builders of these successful lines have studied to build always better machines. Today—well, ask any owner of a Hoosier, Empire Jr. or Kentucky drill. See the local dealer, or write us for catalogues and information.

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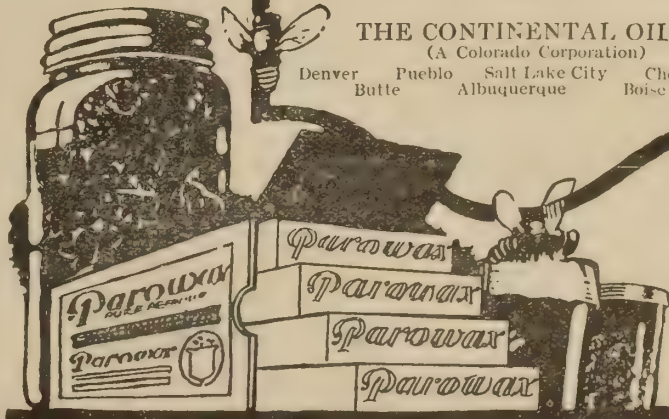
Parowax is guaranteed under the Pure Food and Drugs Act. It is sold by reliable dealers in one pound cartons.

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When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

Selection of Seed Potatoes

The Utah potato crop is freer from disease this year than for several years past, according to a statement issued by Dr. Geo. R. Hill, Director of the School of Agriculture at the Utah Agricultural College. Dr. Hill, who has made an extensive study of potato diseases, having carried on various experiments at the College covering a period of years, and having made a potato disease survey of Utah, Colorado and Idaho, gives it as his opinion that the freeness from disease of the present potato crop can be traced directly to the greater care exercised by farmers in their selection of seed potatoes. It is a well known fact that in the cultivated potato there is a strong tendency to degenerate or deteriorate, where the crop is planted without any attempt to select only the best for seed. But this tendency can be overcome under ordinarily favorable conditions, by the planting of only good seed and by proper handling of the crop.

The following practical suggestions as to seed selection are made by Dr. Hill:

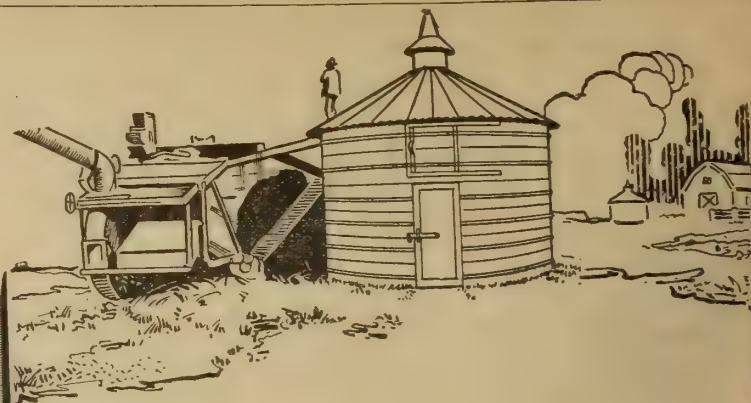
Now is the time to begin to think about your seed potatoes for next year. Potatoes for seed should be selected from two distinct points of view. They must be selected from the standpoint of vigor, productiveness, marketability; and from the standpoint of freedom from disease.

If seed selection is not kept up potatoes will run themselves out. If you go into the average Utah potato field you will find a large, fine vigorous vine growing side by side with a spindling dwarf, and the patch will show all gradations between. This indicates a lack of proper selection. Well bred potatoes would be selected for uniformity, vigor and trueness to type.

To be marketable, potatoes should be uniform and of a size suitable for market purposes. The home market likes a potato about the size of a door-knob or a little larger. The hotel market likes a larger potato. Smoothness is a factor in marketability. Rough potatoes cut to a great deal of waste.

A farmer looking to his future crop will want seed free from disease. To secure marketability, vigor, productiveness, and freedom from disease, the following method of selection is suggested.

The grower should first select a number of willow wands, or stakes. With these in his hand, he should go over his field carefully, before frost, selecting those hills which seem most nearly ideal. In those hills he should place a stake. He should select more than enough to plant a seed plot for the next year. Those hills are dug by hand and only those potatoes saved which come out of a productive hill and which are fair sized, uniform, and smooth. Often the promise of a vigorous vine is not borne out and the hill is no good for seed potatoes. Of course if any diseased potatoes appear in a hill, the entire hill should be discarded. If the percentage of diseased hills in a field is large, no selection should be made from it. If the percentage is small, it is profitable and advisable to go through the field and dig by hand those hills markedly abnormal. These potatoes are good for food, but not for seed. The care with which this selection is made will determine largely the value of the re-



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The superiority of Butler Bins is easily seen by anyone who will compare them with other makes, or will study our booklet, which your dealer will gladly furnish or we will mail free.

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maining potatoes for seed.

The potatoes thus selected are to be used for a seed plot for the next year. From this seed plot enough potatoes can be secured for the fields the ensuing year. By planting a seed plot every year, seed for the succeeding year is always provided.

Another method of selecting seed potatoes that is giving satisfactory results with a number of Utah and Idaho farmers is as follows:

After the potato digger has gone along a row and brought the potatoes to the top of the ground, the potatoes are left in piles corresponding to the hills formerly there. It is then possible to select at a glance those hills that had a high rate of production of clean, uniform potatoes. These are gathered by hand and used for the seed plot.

Now is the time to decide on land which is to be planted into potatoes for next year. If possible select a piece that has not been used for potatoes for about five years. Alfalfa land is best. If alfalfa land is selected plow in the stubble in the fall and plow again, deeply, in the spring. If clear land is used, one good plowing in the spring will suffice.

HANDLING DAMP WHEAT.

Experiment Demonstrates That Damp Wheat May Be Put in Good Condition by Mixing with Dry Wheat.

Much of the new crop of wheat as delivered from the farm this year has a high moisture content which, if put into storage without special treatment, is very likely to cause trouble by becoming musty and hot.

By mixing high-moisture and low-moisture wheat together, a method whereby part of the damp wheat of this year's crop can be put into good condition was demonstrated in an experiment at Baltimore.

The experiment described was performed to determine if it would be possible or feasible to handle damp wheat in such a way that it would not be necessary to put it through a commercial drier and yet insure its keeping safely in storage or during shipment.

For this experiment, one car of Pacific coast white wheat containing 1,098 bushels was mixed with one car of eastern red winter wheat containing 1,126 bushels, and put into storage in an elevator bin. On July 29, samples taken from the white wheat while it was still in the car tested 9.7 per cent moisture. Samples taken from the red wheat on July 31, while this wheat was also still in the car, tested 15.1 per cent. These wheats were thoroughly mixed on August 3 and the mixture was then put into storage in an elevator bin and allowed to remain there until August 6, when it was transferred to another bin. Samples taken from the wheat at the time it was transferred tested 12.9 per cent moisture for the red wheat and 12.2 per cent for the white wheat. The wheat was allowed to remain in the second bin until August 10 when it was transferred to a third bin. Samples taken at this time showed that the moisture content of the red wheat was 12.5 per cent and of the white wheat, 12 per cent. While the grain was still in the cars the red wheat tested higher in moisture by 5.4 per cent than the white wheat. By August 6, or three days after the wheats were mixed, enough of the moisture from the damp wheat had been transferred to the dry wheat so that the difference in their moisture content at that time was only seven-tenths of 1 per cent. By August 10,

or one week after the wheats had been mixed, the difference in their moisture contents had been reduced to only one-half of 1 per cent.

In order to have a record of the temperature changes in the grain during this experiment, four electrical thermometers were placed at different depths in the bin into which the mixture was run. No appreciable change in temperature was noticed during the transfer of the moisture from the red to the white wheat.

The mixing of damp and dry wheat will facilitate the handling of the wet wheat this year. The miller who buys wet wheat and has some dry wheat to mix with it can obviate some of the extra work in handling the damp wheat to keep it in condition and also get it in shape for milling by mixing the two wheats together for a few days. This will also do away with part of the extra work in drying. One car of wheat can be dried down to a low moisture content and then mixed with another car of wheat of high moisture content and time and labor be saved. If the mills or elevators are equipped so that they can mix and dry at the same time, this method will greatly increase their capacity for taking care of large quantities of damp wheat.

INTERESTING TABLE OF WEIGHTS

"Heavy" soils like clay and muck are among the lightest in actual weight. They seem heavy because they are hard to plow.

"Below are the average weights of different kinds of soils, also of various other substances:

Soils and Substances	Wt. per Cu. Ft.
Fine sandy soil	100 lb
Loam soil	80
Average prairie soil	75
Clay soil	70
Uncultivated prairie soil	65
Peaty soil	30
Gold	1,203
Lead	709
Limestone	165
Fresh water	62.5
Sea water	64.5
White oak wood	45
Cedar	35
Cork	15
Air	.075
Steam (not under pressure)	.037

"The very light weight of steam is due largely to its high temperature."
—Farm & Fireside.

THE COMMON PRAYER

"Johnny," said a Sunday school teacher, "do you say your prayer every morning?"

"No, ma'am, but my father does," said Johnny, whose dad is a hardware man.

"And what prayer does your father, say, Johnny?"

"He says, 'Oh Lord, how I do hate to get up.'"



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certainly beats the band for sure results—for purity, economy and wholesome bakings. Tell your mother to try Calumet Baking Powder on the money-back guarantee."

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New Cook Book Free—See Side in Found Can.



Calumet Baking Powder Co.

HOME

TOMATOES AND HOW TO USE THEM

Mary Johnson.

The question is often asked as to whether the tomato is a fruit or a vegetable. Some gardeners raise it as a "fruit" in their vegetable garden. It is a fruit, however, just as much as the bananas, melons, etc.

Less than a century ago the tomato was grown entirely for its ornamental fruit, and was not called tomato at all, but was spoken of as "love apple." Parents cautioned their children not to eat these beautiful apples because they were thought to be poisonous.

Now a different story is told about the tomato. We are told by our home economists that, raw, it makes an attractive and refreshing salad and may be served by itself or in combination with other vegetables, with meat or with fish. As a vegetable the tomato may be prepared in many ways. It makes a good foundation for soups and sauces. Made into catsup or pickles it serves as a relish. The addition of a little tomato gives a pleasant, acid flavor to many soups and sauces, and also to meat, fish and vegetable dishes. If possible the tomatoes should ripen fully on the vines, as the flavor is much better than when picked green and then allowed to ripen.

When properly canned this vegetable keeps well and retains its natural flavor. The housekeeper who has a generous supply of canned tomatoes on hand will find them very valuable at all times of the year, but especially in the winter months when the variety of vegetables is not great.

Overcooking spoils the flavor and color of the tomato.

Tomato Best in Season.

Now is the time when most people like raw tomatoes sliced served for luncheons, dinners or suppers. If one would take a small onion, a large cucumber, small green pepper and chop together, seasoned lightly and spread on a lettuce leaf with a little mayonnaise dressing on top, on individual plates, they would find it to make a dainty relish. It would also lend the necessary color to the decoration of the table.

Another method of serving them is to make a tomato pie. Fry sliced onions in beef stock, then spread them over the bottom of a pan, then a layer of tomatoes, onions again, tomatoes, and so on to the top of the pan. Spread over the top a layer of mashed potatoes about an inch thick and put in the oven and bake. Put a little butter on it and season well on top, and when the potatoes are nicely browned they are ready to serve.

Tomatoes and Lima Beans.

Fry together in butter firm slices of tomatoes and plentiful shreds of green pepper, and serve the combination on a bed of boiled, dried limas. The beans, which should be quite mealy, will take up every particle of the savory tomato juice, and the flavors enhance each other. A little onion juice may be added if desired.

Eggs and Tomatoes.

Select medium sized tomatoes, wipe them carefully and slice from the top of each one piece and scoop out the greater part of the soft interior. Into each break a fresh egg, season highly with salt and pepper and a small piece of butter on the top. Bake in a moderate oven just until the whites are set,



"Young man, the best tonic for you is the right kind of food. I suggest for Breakfast"

Ghirardelli's Ground Chocolate

It's easily assimilated — it's extraordinarily nutritious — and it is supremely delicious."

It comes **PROTECTED**—as all chocolate should—in $\frac{1}{2}$ -lb., 1-lb. and 3-lb. hermetically sealed cans.



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Double Service Tires are made double the thickness of the best standard make tires.

This 100% greater wearing surface naturally gives that much more mileage and service. The average of 12 miles of tough

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These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—the air space and pressure being the same.

They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use in the U. S. government and European War service. Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer:

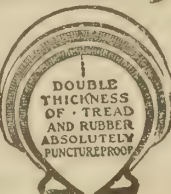
PRICES

Tires Tubes			Tires Tubes		
30x3 in.	\$ 8.60	\$2.30	36x4 in.	\$17.45	\$4.65
30x3 1/2 in.	10.85	3.10	36x4 1/2 in.	21.20	5.60
32x3 1/2 in.	12.75	3.20	36x4 3/4 in.	22.60	5.75
34x4 in.	15.75	4.20	37x4 1/2 in.	23.60	6.20
34x4 1/2 in.	16.70	4.35	37x5 in.	26.30	6.50

All other sizes not included in above list also furnished. Non-skids at 10% additional. Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.

Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Descriptive folder upon request. Write for it.

Double Service Tire & Rubber Co., Akron, O. Dept.



Mention Utah Farmer when you write.

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Long time and low interest above cash payment. Low price for limited time—must be snapped up quick.

Miller & Viele

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Salt Lake City

then serve at once, preferably on individual plates and garnish with watercress or parsley.

Baked Tomatoes.

Small tomatoes, or medium-sized ones would do very well. Wash carefully and cut off a slice from the top; also remove the pulp from the inside and fill with boiled rice, placing at the top a little butter, salt and pepper. Bake in oven until tomatoes are baked through. Serve hot on a lettuce leaf.

Tomato Butter.

Use in the proportion of seven pounds of tomatoes, peeled and sliced, three pounds of sugar, a pint of good cider vinegar and an ounce each of cinnamon and whole cloves. Boil for three hours, and when it begins to settle, stir it constantly. It will keep without sealing.

Tomato Catsup.

Wash and cut in pieces a half peck of ripe tomatoes. Cook in a porcelain-lined or granite iron preserving kettle until soft enough to put through a sieve, which will remove skins and seeds. To the pulp add two tablespoonfuls of salt and pepper, one-half tablespoonful of allspice, cloves and half pint of vinegar. Mix the salt and spices in a bowl and blend well before putting into the tomatoes. Let the tomatoes cook for several hours before adding the spices and vinegar. Cook until thick and bottle. Store in a cool cellar.

Uncooked Catsup.

Peel and chop a peck of ripe tomatoes and hang in a bag to drain for 24 hours. Add to the drained tomatoes four bunches of celery (chopped fine) and one large cupful of chopped onion. Mix the three thoroughly and add one-quarter cupful of salt, one-quarter cupful of sugar, two tablespoonfuls of mustard seed, two tablespoonfuls of ground cinnamon, one teaspoonful

ground allspice and two large red peppers, chopped fine. Mix thoroughly and put in self-sealing cans.

Tomato Jam.

Select sound, ripe fruit and peel and quarter them. Put them into the preserving kettle with equal weight of loaf sugar, the drained juice and rind of a lemon for every four pounds of the fruit and a little powdered ginger. Cook the mixture slowly until it jellies, then try with a spoon. Turn into jars and cover.

Egg Tomatoes in Sweet Pickle.

Pour scalding water over seven pounds of egg tomatoes, let them stand for a moment, and remove skin. Cover them with vinegar much diluted with water, and let them stand 12 hours. Put a half cupful of weak vinegar in the preserving kettle and add part of the tomatoes, then some sugar and any whole spices, such as ginger, allspice, cinnamon, cloves and mace, using these and even more varieties until suited to the taste. Add more tomatoes, more sugar and spices, alternating the layers until all the tomatoes and five pounds of sugar have been used. Cook very gently, stirring just enough to prevent scorching without breaking the tomatoes. When they are quite clear and transparent, remove them carefully and boil down the syrup. When the syrup is thick, strain it and add tomatoes. Boil up once and pour into pint jars to be sealed at once.

CHOPPED PICKLE

Toothsome chopped pickle that appeals to most palates.

Green tomatoes.

Cabbage— $\frac{1}{4}$ as much as tomato.

Carrots— $\frac{1}{4}$ as much as tomato.

Onions to taste.

Whole cloves tied in bags.

White or brown sugar.

Vinegar.

Chop tomatoes with chopping knife, put in colander to drain. Chop cabbage, boil with tomatoes in small quantity of vinegar. Boil carrots in salted water until well done, chop and add to cooked tomatoes and cabbage. Drain the whole and prepare fresh vinegar, sugar and spices. Bring to a boil and put in jars.

PURE MILK FOR GOOD HEALTH

Pure, clean, sanitary milk is necessary for babies and very important in the health of children and grown-ups. During this summer season when there is especial danger from typhoid, infantile paralysis, or other diseases which may be transmitted through the milk supply, it is especially important to patronize only those whose premises are carefully kept in accordance with the best methods prescribed by the inspectors. No change should be made from a supply that has been giving good results unless there is reason to believe that the new supply will be distinctly better.

Fortunately cows are subject to but few diseases that are dangerous to milk users. If a cow appears to be in good health and has no indications of udder inflammation, she can be counted on to give wholesome milk provided she is free from tuberculosis. The only way to be sure she is free from this disease is to have her tested by a competent veterinarian.

To keep dirt and bacteria out, the cows must be kept clean, especially in the region of the udder. The milk should be drawn into a covered pail which is thoroughly washed and scald-

ed after each milking. Only good clean water should be used for this purpose.

No matter how carefully milk is

produced, difficulty will be experienced in keeping it sweet if it is not kept cool until consumed.—Percy Werner, Jr.



Words will not tell the Charm of Schilling's Tea, nor the subtle difference in its four taste-types

Each taste—Japan, English Breakfast, Ceylon, Oolong—is distinct, different. And one of them is the taste that will make you tea-happy! If you will send ten cents, we will mail you the Taste Packet—the simplest, surest way to pick YOUR kind of tea. It contains four parchment envelopes of the four taste types—enough to make five or six cups of each kind.

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Sold through grocers only. Standard packages, 8-oz. and 1-lb.



Make Your Jelly Good and Firm

It's just as easy to have firm jelly as liquid. A little care in the preparation is all that's necessary.

See that your fruit is freshly picked—not too ripe. A fruit containing a large amount of "pectin" is necessary. Currants, plums, crab apples, quinces and grapes may always be depended on for jelly.

Since care is necessary in the selection of fruit, so also is it advisable to use an absolutely pure sugar—the quality of "Utah-Idaho." This perfect sugar is economical and dependable.

Write to Utah-Idaho Sugar Co., Salt Lake City, for FREE book of recipes, entitled "The Sweetest Thing in the World."

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Live Stock

CATTLE FEEDING LESSONS FROM MISSOURI STATION TESTS

P. F. Trowbridge, Missouri Agricultural Experiment Station.

Steers that are full-fed from birth should not be held beyond 20 or 22 months of age because there is a decided falling off in the rate of gain. After this age the carcasses are overdone, there is an undue waste of excess fat and the gain in weight in proportion to feed consumed is much reduced as well as the gain per day per steer. In which some steers were full-fed while others received much less feed.

The steers which received feed insufficient for the greatest growth were most affected by such ailments as indigestion and pink eye, and their sickness was more likely to result in death. In fact, among more than a hundred steers in the experiments, all the losses except one were among the low-fed animals.

Steers fed for long periods such as three years and a half on feed insufficient for the greatest growth, did not seem to be able to digest their feed and to make good gains when later put on full feed. Even a steer whose growth was greatly retarded for only one year never equaled in weight a steer of the same age which had been full-fed from birth, although when put back on full feed he made very profitable gains and developed a very choice carcass of beef. These results do not disagree with the common observation that thin steers often make the most profitable gains. Such feeders have usually not been starved so long or so steadily. They have usually had bulky feed which kept up the stomach capacity even though it didn't furnish a great deal of nourishment and were very likely to have at least occasional large quantities of good nutritious feed while the steers in the test were kept regularly on small quantities of food for long periods so that they seemed to lose the capacity to eat and digest as large quantities as they must handle to make the most profitable gains.

Thrifty yearlings put on feed that is not sufficient even to keep up the body weight they already have, continue to grow in height and framework even when made to lose half a pound a day. Measurements of the skeletons did not indicate any decrease in the rate of growth for several months. Even when these animals were using the body fat to supplement the lack of feed there was a very noticeable addition of fat in the skeleton. Only when approximately all the fat was taken from the soft parts did the animals begin to draw on the fat in the skeleton to maintain existence.

The most economical choice beef resulted from the use of a feeder weighing about 750 pounds so fed as to make a gain of 500 pounds. Such a steer will probably not quite top the market but he should make the greatest possible profit to the feeder and furnish an economical carcass for the butcher and housewife and meat of a quality to please the most exacting. The carcasses show that of this 500 pound gain; 38 per cent is water, 49 per cent fat, and 12 per cent protein. When similar steers were fattened until they had gained another 500 pounds or gone from 1250 pounds to 1750 pounds, the carcasses were much overdone and

SPECIAL PRICE On Grain Bins For September

Thousands of farmers every year make the serious mistake of disposing of their crop at harvest time or immediately after.

THE PRICE IS LOWEST AT THAT TIME

Statistics show that the man who can handle and hold on to his crop until after the harvest flurry is the one that really gets the price for his grain that he is entitled to.

Grain Bin is the Solution

Thousands of dollars are saved to the farmer every year who has had the forethought to invest in this essential to all grain raisers—**The Grain Bin.** More is to be made by the farmer who invests in one this year for the first time. This from the fact that there will be a greater demand for grain and the fact that he will be able to carefully keep his crop until the price is such that he can get a good figure for his harvest.

The Great "Columbian" Bin Scientifically constructed after years of study and work to make it best—constructed by the largest bin manufacturers in America—it has proven itself the most practical grain bin on the market today. Theft proof, rat proof, storm proof, heavily galvanized so it can't rust, built heavy and strong and lastly it is so constructed that it keeps your crop in good condition always. Grain buyers will buy crops that have been stored in "Columbian Bins" quicker than any other crop. They know it has been kept right.

"BUY A BIN"—MR. FARMER—BUY IT TODAY

Sold by the Reliable House of

SAM PETERSON & SONS COMPANY

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the second 500 pounds was 66 per cent fat, 18 per cent water, and 5 per cent protein.

PULP FEEDING By C. E. Swink.

The justly famed English chop and roast beef are produced by the system prevalent in England of feeding a considerable amount of turnips and other succulent foods throughout the year to their sheep and cattle. Here, in America, a great deal of our choicest beef and mutton is produced by the addition of beet pulp or silage to both the growing and fattening ration.

An analysis of numerous samples gives the following average composition of fresh and dry beet pulp, turnips and oats:

	Water.	Ash.	Protein.	Fiber.	Nitrogen; free extract.	Fat.
Fresh pulp	89.9	.4	1.0	2.2	6.3	.2
Turnips	90.6	.8	1.3	1.2	5.9	.2
Dry pulp	6.4	3.3	10.8	19.8	58.4	1.3
Oats	11.0	3.0	11.8	9.5	59.7	5.0

We see that, theoretically, fresh or wet beet pulp has practically the same composition and food value as turnips, and dry pulp has about the same nutritive value as oats, and the constantly increasing demand for pulp for cows, cattle and sheep is evidence that it is giving satisfactory results.

Aside from the inherent nutritive value of pulp, its chief value lies in its sanitary effect upon the digestive system, by enabling the animal to assimilate the greatest possible



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One Gallon Calko Dip Makes
From 50 to 100 gallons of disinfectant.

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Don't feed worms—save your hogs
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mount of nourishment from the food eaten.

As a milk-producing food, when fed to dairy cows or ewes suckling lambs, beet pulp is second to none of the other feeds. Where pulp can be obtained, sufficient succulence can be furnished to most any ration without the addition of ensilage, although pulp and ensilage are often both included in a ration.

The meat of steers or lambs fattened on pulp, alfalfa hay and grain is of a superior quality, and the cost and amount of gains made on this ration usually compare very favorably with those made on other rations.

Young stock, dry cows and breeding ewes can be kept over winter in first class condition on a ration of beet pulp and alfalfa hay. In fact, this is the feed usually used for this purpose in Colorado, wherever the pulp can be obtained.

Considering the feeding value of pulp and its cheapness, every beef grower unquestionably should haul pulp back to his farm and feed it to whatever class of cattle or sheep he may have. The daily amount of pulp usually fed is: Steers, 75-125 lbs.; dairy cows, 50-100 lbs.; young stock, 20-60 lbs.; sheep, 7-10 lbs. Pulp is 90

per cent water and the 10 per cent of solids is composed chiefly of the broken down cell walls, so it should be fed in connection with alfalfa, bran or other nitrogenous feed.

Fresh pulp is readily eaten by sheep and cattle, but it may take them several days to acquire a taste for the sour or siloed pulp. After being siloed for several months, pulp is improved in its palatability and feeding value.

The Colorado Experiment Station conducted an experiment with 150 steers for the purpose of determining:

1. Whether beet pulp and alfalfa hay are suitable for fattening steers;
2. Whether it is profitable to feed grain with pulp and alfalfa hay; and
3. Which grains can be fed to the greater advantage, corn or barley and oats combined.

The steers were divided into three lots, all receiving all the pulp and hay they wanted. Lot 1 received, in addition, corn; Lot 2 oats and barley; while Lot 3 received no additional grain.

The net profit per steer was figured as follows:

Lots 1.....	\$12.55
Lots 2.....	15.45
Lots 3.....	16.20

REMEDIES FOR IVY POISONING

Direct contact with the poison ivy plant is not always necessary to produce poisoning, as the poison may be transferred from clothing, gloves, and implements, also from towels used by those who have been in contact with the plant. When there is reason to believe that there has been exposure to the poison, repeated washing with warm water and strongly alkaline soap as soon as possible is advisable.

There is no one remedy that will cure all cases of ivy poisoning, and in severe cases a physician should be consulted. Specialists of the department have found the following methods and formulas useful in many cases: At the outset, removal of the cause of the irritation may be accomplished by cleansing the inflamed surface repeatedly with alcohol, or with a saturated solution of sugar of lead in alcohol, using a fresh bit of lint or absorbent cotton each time, to avoid spreading the irritant. The sugar of lead solution can not be used over extensive areas because of risk of lead poisoning. Covering the inflamed parts with lint or absorbent cotton kept constantly moist with limewater or with a saturated solution of bicarbonate of soda will afford relief. When

this can not be used, a simple ointment, such as zinc oxide ointment, is recommended. A solution containing 1 ounce of fluid extract of grindelia to 1 pint of water applied on cloths and allowed to evaporate may afford relief. Black wash prepared by adding 1 dram of calomel to 1 pint of limewater, may be applied two or three times a day, allowed to dry, and followed by zinc-oxide ointment. This treatment must be used with caution in extensive cases because of the possibility of mercury poisoning. The acute inflammation of ivy poisoning is sometimes followed by eczema and secondary infections of the skin, which, in mild cases, will yield readily to treatment with bland antiseptic ointments. A formula highly recommended for ivy poisoning and often especially helpful at this stage is the following:

Carbolic acid.....2 grams.
Rescorcin.....2 grams.
Bismuth subyallate.....4 grams.
Equal parts water and lime-water to make.....250 c. c.
This solution may be dabbed on the affected parts several times a day.

Do not wait until you have used the last Butter Wrapper before ordering more, because it takes time to print them

"First of All—Reliability"



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Of Slightly Used, Second Hand and Rebuilt

Pianos and Player Pianos

49 Pianos of remarkable excellence all guaranteed. Priced from... **\$85**

22 Rebuilt Pianolas and Player Pianos all guaranteed. Priced from... **\$290**

This entire stock of seventy-one instruments representing a value of more than \$21,000—has been reduced 25 to 50 per cent in price to induce quick and certain clearance.

Never before have we offered a finer collection either of pianos or players. Nor have ever before felt justified in making such excellent exchange instruments at prices so exceedingly low.

The great prosperity and tremendous business of the past few months has brought us an overwhelming number of fine pianos and player pianos—taken in exchange for the Pianola, the remarkable Duo-Art Pianola and other of our highest grade instruments which have been sold, during this recent period, more extensively than ever before in the history of our organization.

The high quality of the instrument sold is an indication of the value of these taken in exchange. The present instruments are not old worn out specimen "traded in" because no longer useful—on the con-

trary every one is in the prime of its excellence. Everyone would have continued to satisfy its previous owner for many years had he not felt a desire and an ability to purchase a finer and more expensive instrument.

Scores of the piano and players are new in all but the technical sense of the word—some models in discontinued styles are new. Almost without exception the entire number are like new. For our shops, working the capacity since December, have taken care of every detail of refinishing and renewal of parts.

In fixing prices however, we have had to disregard the unusual quality of goods and the fact that we are dealing with a stock of new quality of goods and the fact that we are dealing practically with a stock of new instruments.

We cannot crowd our warerooms with the stock. We cannot give up space in our storage houses to accommodate it. Clearance must be immediate.

Our prices have been calculated to accomplish this purpose within a 15 day period—the period of your opportunity.

Mail us this information blank TODAY.

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Our Fifty-Fourth Year—HOUSE OF STEINWAY

POULTRY

DON'T EAT POULTRY

THE DAY IT'S KILLED

Arizona Agricultural College.

Poultry should not be eaten the same day it is killed. The habit of killing a chicken in the morning, preparing it for cooking and eating it within a few hours is altogether too common. The internal temperature of a chicken is nearly 107 degrees, and when the chicken is killed and eaten in a few hours it is impossible for the animal neat or "chicken odor" to escape. Kill, cook and eat a chicken as soon as possible and the meat will smell of the barnyard. It is not fit for human consumption. Chickens should be killed at night; hung in a well-ventilated place until morning, then dipped in hot water to remove the feathers, and cleaned and drawn just before being placed on the stove. It is preferable to starve the chicken before killing, but this is not necessary when the chicken is killed at night and eaten the following day. If they are starved and there is no food in the crop or intestines they will keep for two or three days if they are not opened. Killing a chicken the night before eating makes the meat tender. It allows the "chicken odor" to leave the carcass, and it improves the quality and flavor of the flesh. The best fed chicken in the world will be unsavory and tough when eaten before the animal heat leaves the body, whereas this same chicken if killed at least 15 to 20 hours before it goes on the table will be a delight to an epicure.

MOULTING SEASON

The fall of the year is the natural moulting season. A hen's ability as a winter egg producer depends largely on how she passes this moulting period.

While the moulting period can be forced and shortened by the use of stimulants, it is usually best to allow it to take its natural course. As a general rule the hens that moult late and quick are the highest producers and the early moulter is seldom a winter layer.

To grow a new set of feathers is a severe drain on the birds and the nature of the feed at this time is of the utmost importance. The common grains such as wheat, corn and oats fed in sufficient quantities will keep the fowl warm and maintains the body weight but these grains

alone are not enough. The fowls need some real feather making food, rich in protein and mineral.

A mash composed of equal parts by weight of wheat bran, ground oats or barley, shorts and meat scrap will make a very good supplement to the grain ration. The addition of one-half part each of oil meal and sunflower seed to this mash will give the new coat of feathers a very sleek, glossy appearance. If the hens do not have full access to some form of green feed it should be supplied. One of the best green feeds is cabbage. At this time of the year cabbage is usually quite plentiful and the waste leaves and spoiled heads make a valuable feed for the moulting hens.—C. S. Anderson, Colorado A. C.

PURE BRED POULTRY

By F. W. Kazmeier, College of Texas.

Pure bred, or standard-bred, poultry possess many advantages over mongrel or scrub stock. Experience has proven that pure bred stock, bred for egg production, will lay a larger number of eggs than common mongrel stock of a mixed breeding.

Pure bred stock is bred for a purpose, mongrel stock is not. There are breeds for show, for egg-production, meat-production and a combination of the latter two purposes.

Pure-bred stock produces an improved quality of meat. The eggs are more uniform in size, shape and color, and always bring a premium over mixed eggs in the market.

A flock of pure bred poultry makes a very pleasing appearance. The owner takes pride in them and hence gives them better care and feeding.

Pure-bred stock will find a quicker market and always has a greater selling value.

The initial cost of starting with pure bred birds is small. The advantages are many.

It costs no more to feed a pure bred bird than a mongrel.

Experience and experiments have proven the pure-bred bird to be more profitable and desirable in all respects.

KEEP BOTH EYES OPEN

Warm weather brings the poultryman's worst enemy—lice. When once the vermin have taken possession of the premises, it will be found a much more difficult problem to get rid of them than it is to keep the nuisance curbed by timely action.

The poultry houses should be thoroughly cleansed and given a coat of whitewash. In the latter should be used a small quantity of crude carbolic acid. This mixture can be applied with either a brush or a spray. Arrange the nests and roosts so that they can be easily removed and cleaned. Nest boxes should be frequently supplied with fresh litter and the roosts washed with a solution of good lice killer.

The little red mites will be found the most troublesome of any pests that infest the poultry houses. The absence of these minute creatures during the day often leads to the erroneous conclusion that the fowls are free from their depredations. But their work is done almost wholly at night, hiding in the cracks of buildings during the day time. Extra care should be taken to reach every crevice with the mixture, as fumes will not seriously disturb the slumbers of mites. They must be killed by contact.

Want Winter Eggs? Then Get Busy Now

Egg prices are rising—will soon reach the high point of the year. Winter eggs pay big profits, but you can't get them by wishing for them. Act! Have your hens laying well when eggs mean money. At this time every bird in your flock needs

Pratts Poultry Regulator

the *Guaranteed Poultry Tonic and Conditioner*. A natural egg-maker—makes hens want to lay. It tones them up—increases appetite—assists digestion—stirs up the sluggish egg-producing organs—drives the hens to the nest—insures profits for you.

Pratts Poultry Regulator will keep your old hens laying steadily until they molt, then shorten the molt and hurry them back to work. It will push your pullets to early maturity, start them laying sooner than usual and keep them at it all winter.

America's original poultry conditioner—imitated but never equalled. Small in cost—great in results. Sold by dealers everywhere on a money-back guarantee to satisfy you. In packages, pails and sacks. Refuse imitations. If your dealer does not have Pratts, write. Chicken lice just naturally hate Pratts Powdered Lice Killer. Try it and you will see why!

Write today for 66 page
Poultry Book—FREE.

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Saturdays to Mondays—

—To encourage baseball games and other sports between different towns.

—To make possible inexpensive outing and fishing trips, and generally to make it possible for our patrons to "get about."

Ask any Oregon Short Line agent for further details, or write,

D. S. Spencer, General Passenger Agent,
Salt Lake City, Utah.

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Such as is supplied by sugar which has 98 percent available food energy, more than other staples—that is why you have a craving for sweets, it is nature's demand and sugar is, per pound, one of the cheapest foods that can be secured, substitutes cost much more money.

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Gem Herd of Improved Chester White Swine

This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions of the World's Fair held at Frisco his last year. Both Sire and Dam, still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale at all times.

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Provo, R. F. D. No. 1.

breeders of S. C. White Leghorns and R. I. Red fowls and Airedale Dogs.

UTAH HATCHED WHITE LEGHORN BABY CHICKS \$11.00 PER 100

Circulars, order-blanks, etc., upon request. Candee Colony Brooders carried in stock.

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100	\$.90
200	\$1.25
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THE UTAH FARMER

LEWEL UTAH

AS A TONIC

Hans was speaking about the high price of cabbage in his town. "Kebbeges is awful high dis year," said. "Me and mine vife puts up ven, eight,nine,barrels of sauerkraut every year—but ve can't dis year. De bbeges cost too much." "But you put up some sauerkraut, in't you, Hans?" questioned a friend. "Oh, yes two or t'ree barrels—just haf in de houes in case of sickness." Exchange.

Lawn grass seed should be scattered in poor spots in the lawn as soon as the weather begins. Use the best grade of Kentucky blue grass.

THIS YEAR IS THE YEAR TO BUY HOGS—

last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again. The best time to buy is when pigs are young. Write today.

RICHARDS LIVESTOCK CO.
Virginia Idaho
Jesse S. Richards Mgr.
(The West's best Durocs)

BALLAMOAR FARMS

has for sale

AN ATTRACTIVE FOUNDATION HERD OF REGISTERED JERSEYS

9 Cows and a Bull

Rapid natural increase causing overstock makes a sale necessary.

The Bull—GUENON'S CHAMPION BELMONT—is 11 months old, thrifty, has straight lines and good capacity, and will make a show animal. His dam has a 500 lb. R. of M. record. His sire is Belmont's Champion Lad, the sire of many prize winners. Two of his daughters have produced over 600 lbs. of butter in a year.

The cows are not culls but are richly bred and of good dairy type. They all have daily records of milk production.

Write for particulars or call and make your own selections.

Richmond CAINE LIVESTOCK COMPANY Utah

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NORTHERN HOTEL CO., PROP.
FRANK L. CRAMPTON, MGR.

RATES \$1.00 PER DAY AND UP

"The HOTEL that's BEST In all the WEST"

CAFE IN CONNECTION

AGRICULTURE AND THE BEAUTIFUL

Arthur D. Cromwell.

Children have an instinctive love of the beautiful. In fact, love of the beautiful begins way back of the human race. The most superficial study of animals and plants makes it plain that their lives are largely shaped and controlled by influences that make for beauty. The beauty of shape and color in flowers is undoubtedly due to the choice of insects that are attracted by them. Even the odors are due to the choice of insects. The mating of animals has led to natural selection that has given us the bright plumage and other colored parts, the heavy manes, the proud struts, and the beautiful shapes of many of the animals. While this instinct for the beautiful is present in all normal children, it may, like other instincts or tendencies, be allowed to remain dormant until the child ceases to respond or get pleasure from the really beautiful. Much of our hard pioneer life has tended to crush out this instinctive love for the beautiful. And yet, strange as it may seem, the love for the beautiful is a very "practical" affair. When our farmers are more like the farmers of France and put up their farm products in neater, nicer looking form, the prices will rise rapidly. When their fruit is better sorted and boxed, when their butter looks more attractive, when their eggs are graded as to form, color, and size, when they bring their milk to town in more attractive cans, the amount consumed and the price paid will be greatly in

favor of the farmer. Even a beautiful lawn and well kept buildings often win a farmer city customers who pay much more than the regular market price.

The first half of the twentieth century is the critical period esthetically for many states. The buildings and other temporary improvements of the pioneers are to be replaced by permanent improvements. If our schools turn out a generation sensitive to the beautiful, we need have no fear but that the beauty of the country will give way to greater beauty of the permanent home makers. Esthetic culture will teach the country folks to love their open skies, their beautiful groves and open prairies, their wonderful landscapes with their golden harvests, their woods and their orchards. If we teach the children to appreciate the beautiful, they will be content to dwell in the country, and when they are away, they will long to return to the beauty, the quietness and contentedness of the country. But we cannot make children love the beautiful by talking about it and nothing more. To love the beautiful, we must study, and dig, and plant, and compare, and hold communion frequently, and for a long time. Nothing short of living consciousness of the beautiful will make us love the beautiful.

MONEY TO STATES, AS PROVIDED IN THE ROAD LAW

The Secretary of Agriculture, under date of July 21, 1916, certified to the Secretary of the Treasury and the governors and State highway departments of the several States the following apportionment of the \$5,000,000 of Federal road funds available for the fiscal year ending June 30, 1917. This is the first installment of Federal moneys to be apportioned to the States under the Federal-aid road act approved July 11, 1916. Before making the division among the States, the Secretary, in accordance with the act, deducted 3 per cent, or \$150,000, needed for administering its provisions. This left \$4,850,000 to be apportioned among the States, one-third in the ratio of area, one third in the ratio of population, and one-third in the ratio of mileage of rural delivery routes and star routes. The apportionment on this basis gives the following amounts for the several States:

California	151,063.92
Colorado	83,690.14
Idaho	60,463.50
Nevada	64,398.30
Oregon	78,687.37
Utah	56,950.15
Washington	71,884.28
Wyoming	61,196.82

Late Appropriations.

The apportionment indicated above is only of one year's funds. For succeeding fiscal years the act appropriates the following amounts:

1918	\$10,000,000
1919	15,000,000
1920	20,000,000
1921	25,000,000

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Tommy—I took 'em off in case of accident.

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The climate is similar to that of Cache Valley, which immediately adjoins Marsh Valley on the south. There are no extremes of temperature.

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Stock, grain and produce are shipped to Utah, Montana and Pacific Coast points. The local demand is greater than the supply. There are no better markets any place in the country than those tributary to Downey.

COME TO DOWNEY

SEPTEMBER 22 and 23

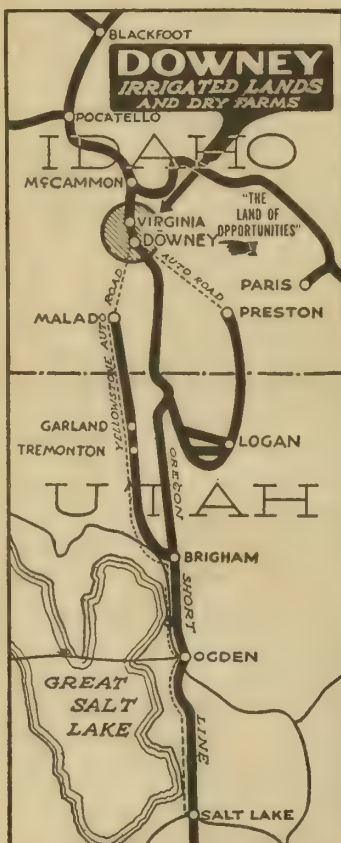
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You'll see some of the best agricultural and livestock exhibits ever displayed.

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Study this Map



Irrigating Water

An abundance of irrigating water is furnished through the big canal from the fine modern reservoir on the Portneuf river. The main canal is 30 feet wide, 4½ feet deep and 26 miles long.

Culinary Water

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A sugar factory will soon be built near Downey. By getting in TODAY you will be buying at "ground floor" prices. The Downey and Marsh Valley country is growing rapidly. Prices will never be so low again.

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\$60 to \$100 An Acre

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The first payment on a 40-acre farm is from \$200 up. The balance can be paid in 10 equal yearly payments. Interest at only 6 per cent on the unpaid balance. Dry farms \$35 to \$65 an acre.

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 7

LEHI AND SALT LAKE CITY, UTAH

SEPTEMBER 16, 1916





The "Best Thing" About Reo Cars



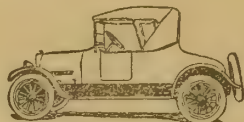
The New Four-Cylinder, 3-passenger
Reo Roadster, \$875



The New Reo the Fifth, "The
Incomparable Four," \$875



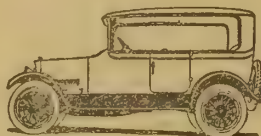
The New Four-Cylinder Reo
Enclosed Car, \$1025



The New 4-passenger Reo Six
Roadster, \$1150



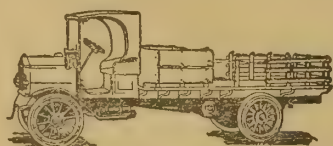
The New 7-passenger Reo Six
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The New Reo Six 7-passenger
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1500-pound Reo "Speed Wagon," \$1000



2-ton Reo Truck (Chassis only, with
Driver's Seat and Cab), \$1650

(All Prices are f. o. b. Lansing, Michigan)

IT WOULD BE DIFFICULT to say just what is "the best thing" about Reo automobiles and Reo motor trucks.

ONE WOULD SAY "the service that goes with every Reo." Another would say "uniform excellence" is "the best thing" about Reos.

BUT WE WOULD SAY without a second's hesitation that one of the best things is the fact that every Reo model is, long has been, and long will be, standard.

FOR IT DOESN'T MATTER when you buy a Reo—in season or out—this year, last year or next year—you have a car that is standard and the depreciation of which is less than that of any other automobile of similar price or passenger capacity.

YOU'D SAY REO QUALITY was probably the "best thing" about Reos—and of course, there's no gainsaying that.

REO QUALITY at Reo prices is universally recognized as "The Gold Standard of Values."

THAT IS THE BASIS of Reo prosperity, Reo demand and Reo reputation, of course.

BUT OTHERS MAKE good cars—in spots. By fits and starts as it were. This year a good model; last year, one they are not so proud of; and next year—who knows?

THERE'S SO LITTLE consistency in the past performances of most of them, none can predict the future with any degree of accuracy.

BUT REOS RUN TRUE TO FORM always. If it's a Reo then it's a good car—no matter what year it was made.

IF IT'S A REO there's always a fixed value for it in the new, or in the "used car" market.

IS IT A NEW REO—it will command a premium. "You were lucky to get a Reo," is an expression a new owner hears frequently.

FOR EVERYBODY KNOWS that the demand for Reos is always greater than the factory output—always has been.

IS IT A 1911 MODEL—any dealer will tell you its present value—and they won't differ five per cent in their estimates.

THAT'S THE REMARKABLE difference between Reos and other cars—with only one exception. And that isn't a competitor of Reo.

CONSIDER THIS most carefully in your selection of a car—this fact, that every Reo model is standard from season to season.

IT IS A STAPLE, not a novelty, you buy when you buy a Reo.

AND IF YOU DO have to wait a few days for a Reo, whereas you can get other makes right off the floor—remember there's a reason, and that reason is the best possible reason why you should select a Reo for yours.

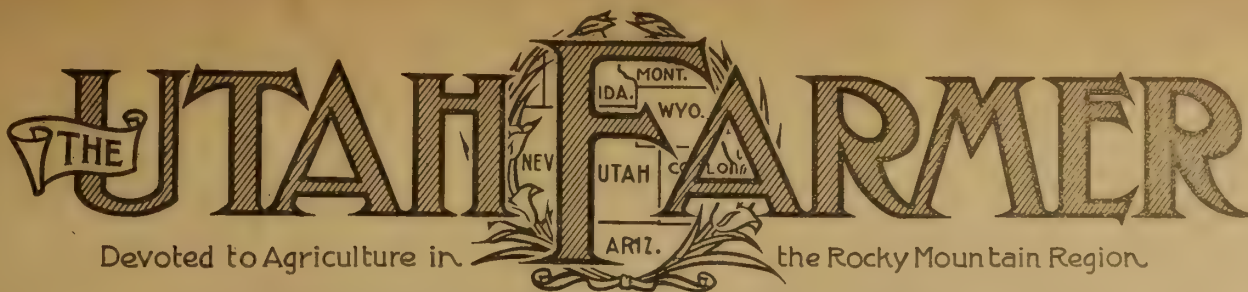
IT MEANS MONEY in pocket for you in years to come—as well as satisfaction from the day you do get your Reo.

REO MOTOR CAR COMPANY
REO MOTOR TRUCK COMPANY
Factories: Lansing, Michigan



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VOLUME XIII.

LEHI, UTAH, SATURDAY, SEPTEMBER 16, 1916

No. 7

Learning From Neighbors

Wm. Green.

(This article should have appeared in our last issue. We held it, hoping to secure some photos and cuts, and are again disappointed because they did not reach us in time for this issue.—Ed.)

The farmers of Utah are using their automobiles for something more than pleasure. They are using them for educational tours.

The progressive farmer of today is finding it profitable to go and see what the other fellow is doing. The county agricultural agents are conducting these tours as a part of their educational work. Helping the farmers to get better acquainted with each other. Anyone who has never made one of the trips have but little idea of how interesting it is and what can be learned from seeing how the other fellow is doing it. I have talked with some of the farmers since returning and they say that it was the best time they ever spent. Every one returned home with a greater desire to improve his farm. The influence of the trip is being felt by even more than those who went on it. One farmer told me he was going to make his farm so good that when the next trip was made they would come and visit him. Possibly the only fault to be found with the trips taken so far this year is the short time spent at each place. More time should be taken to go into details of how this or that is done, why this farmer produced such a good crop, etc.

The farmers making the trip not only got acquainted with farmers in other counties but they made the acquaintance of the farmers of neighboring towns who were also making the tour.

A brief report of the trips that have been made this year will follow, giving them in the order that the tours were made.

A number of these trips have been made. The first one was by the farmers of Emery and Carbon Counties taking an excursion into Sevier Valley. The start was made with ten automobiles which arrived in Salina the first evening. Here a meeting was held, prominent speakers taking part and were interspersed with music and songs. Following this the guests were entertained at a dance and picture show.

The next morning the touring farmers visited the farm of D. G. Burgess, consisting of 300 acres in a high state of cultivation. Mr. Burgess told his guests how he raised his sugar beets and the profits which came to him from his farm.

They next visited Redmond, and had the pleasure of inspecting a modern farm house owned by Mr. Chandler. From here they went to Aurora and Vermillion, and visited the beet and potato fields of E. W. Kane and Thomas Hedhill. At Siguard a sumptuous feast was given

the visitors. They visited the Keen cement mill, Jumbo plaster mill and the new potash plant. They visited the farm of C. M. Stillman, and saw his Merino sheep, Jersey cattle and Duroc hogs. In Venice they visited the Jersey farm of C. Seegmiller.

Twenty-five auto cars from Richfield met the touring farmers and escorted them to their town. By this time there were seventy-five autos in the party. A concert and reception was given at Richfield to the visitors. The next morning inspection was made of fields of grain, hay, beets, potatoes, etc. The Ogden farm that had been tile-drained was next visited. At the Valley Lawn farm a fine herd of short horns was seen. At Elsinore they visited Hawley's farm and Central cheese factory.

Next came the sugar factory, through which the visitors were taken and the process of manufacturing explained. At Elsinore a lunch was served, talks and music were given during the feast. Leaving Elsinore they next visited Mr. Parker's home where refreshments were served and an inspection made of his pure-bred Jerseys.

Several farms were visited on the way to Monroe, at which place another cheese factory was visited. This factory is owned by one hundred farmers, and is a success from every standpoint. It pays a dividend of twenty-five per cent. At Monroe another reception was given the visitors.

Returning across the valley a visit was made at J. E. Magleby's farm, and at the home of Lewis W. Jones, ice cream, cake and punch were served.

Following are the names of those making the trip from the different towns of Emery and Carbon counties:

Price—Mr. and Mrs. Robt. H. Stewart, Dr. R. E. Cloward, Prof. John Gubler, George Nixon, Mr. and Mrs. Andrew Oman, George Oman.

Wellington—Orange Tidwell, W. J. Tidwell, J. R. Tidwell, D. A. Tidwell, Hryum Tidwell, Mrs. Mary Tidwell, E. H. Thayne, W. A. Thayne, Sorenia Thayne, Mr. and Mrs. Earl Rich, George Milner, John Powell, Clarence Powell, S. A. Golding and Fred Housen.

Lawrence—Bishop and Mrs. O. N. Tuft. Clawson—Bishop and Mrs. Wm. Hitchcock.

Elmo—Mr. and Mrs. H. H. Oviatt, Jr., George T. Oviatt.

Cleveland—Mr. and Mrs. Henry Otterstrom, Mr. Snow.

Huntington—Mr. and Mrs. C. L. Col-lard, Mr. and Mrs. David Leonard, J. W. Nixon, J. W. Nixon, Jr., and Mina Nixon, Edward G. Geary, and Mr. and Mrs. Frank Otterstrom.

Orangeville—Mr. and Mrs. J. Frank Killian.

Castledale—C. E. Larsen, Mr. and Mrs. O. Sorenson, Jr., Randal Anderson, Mr. and Mrs. James Peterson, Myrtle Peterson, Rex Peterson, Mr. and Mrs. Jos. Hansen, Francis Hansen, Mr. and Mrs. James Wimber, and Mr. and Mrs. P. C. Borreson.

(Continued on page 4)

A Farm Repair Shop

By Professor A. Newey, U. A. C.

Modern farming has made the farm repair shop almost a necessity. While it is to some extent a luxury and may afford much pleasure and recreation for the farm boy, its main appeal is its usefulness. It is not my purpose to spend time trying to convince the farmer of the need of a repair shop, he knows this, but rather to give a few suggestions that might make it possible for more of our farmers to have a place where they may repair their machines and other farm equipment.

To make a farm repair shop a success, three things are needed—a building, equipment, and information on how to use the equipment.

It is not necessary to wait until one can build a large expensive building. A lean-to that does not leak will be good enough for a cover and a large amount of work may be done under it. Of course, a lean-to is the simplest kind of a building and the majority of farmers would not be satisfied with it, but I mention it because I have seen one in use and it answered a good purpose. An elaborate blueprint and specifications of a building may help some and discourage others. It matters very little what kind of building providing it is large enough, the floor high and dry, good light, and an entrance large enough to admit the machinery to be repaired.

The tools and equipment will vary with the size of the farm and the ability of the farmer to use them. I do not consider that it would be good judgment to go to a hardware store and select a whole equipment of tools and spend a considerable sum without some knowledge of their use and care. At this point, I would not discourage anyone in buying tools, for I know that most farmers can use them and that farmers as a class are very resourceful, but you have seen the saw hanging on the side of the barn, new and bright last year, but dull and rusty now; or the monkey wrench, new last year, but now the wood is off the handle and the screw will not turn. It was out in the snow all winter where it was dropped last fall. One must have a little pride in tools and this pride usually comes gradually. I would suggest buying a few standard tools to begin with. It always pays to buy good tools. The carpenter could not do his work with saws that I have seen on some farms. Why should the farmer expect to? A farmer once asked me to weld a shaft for him. I had been working on a ranch all summer and I was in fine trim for the job so I answered, "certainly." I went to his shop expecting to find tools and do the job in a hurry. He told me that he had tried to weld it with his equipment. He had a pair of bellows that were torn and,

of course, would not blow air, a small cast iron anvil and a carpenter's hammer. No, "neither wise men nor fools can work without tools."

It is useless for me to give a list of tools for a farm repair shop. Each farmer would need a different list to fit his particular purpose. I will suggest rather what I consider a good way to find out what tools to buy. Let me give an illustration. Suppose you wish to purchase a horseshoeing outfit. I think most of you would know what to buy, but if you do not, go to a blacksmith shop and in a few minutes you will know what to get, and then be sure you get just as good tools as the smith has if you have to buy them one at a time. Do the same thing with your carpenter and blacksmith tools. If you get this idea, it will be far better than any list of tools I might give. If you order from a catalog do not buy the cheapest tools. The mechanic can not do a job with them. Why should you expect to?

It is obvious that there are two ways of learning to use a tool: first, study it out for yourself; and second, get someone to show you. Both methods are good and we all more or less use them every day. When you buy a tool spend a little time looking it over. Read the directions if there be any. There are many things about tools that one may find out for himself and there are many things that it is hard to find out alone. A man is a tradesman because he has acquired skill in the use of certain kinds of tools, and it usually has taken him a long time to get skill and information. The best way to learn about tools is to get in touch with good mechanics. This may seem impossible to the farmer who has to spend most of his time on the farm, but it is not. Schools are now provided where one may go and learn the principles of trade and the use of tools. In most of the high schools of Utah the boy may go and learn woodwork and in many of the schools forging is also taught. The Agricultural College and a number of other schools have courses in machine work, blacksmithing, and woodwork. Special courses are given during the winter months to meet the special needs of the farmer. Any one who has finished two years high school work or is eighteen years of age or over is welcome to attend these courses. Here is a chance to get started in the right direction. A man can learn more about tools in three months in the college shops than he can "pick up" on a farm in a life time. The essential thing is the right beginning; a foundation which one may build upon the rest of his life. Just consider

(Continued on page 6)

LEARNING FROM NEIGHBORS

(Continued from page 3)

Ferron—Bishop and Mrs. Victor D. Nelson, Mr. and Mrs. Oscar Nelson, Mr. and Mrs. Sophus Nelson, Mr. and Mrs. Joseph Nelson, Mr. and Mrs. L. A. Olsen, Mr. and Mrs. Samuel Singleton, Morris Singleton, Mr. and Mrs. John E. Stevens and son, Mr. and Mrs. Joseph Stevens, Mr. and Mrs. D. A. Lowry, Mr. and Mrs. E. A. Wild, Mr. and Mrs. Wm. Killpack, Mr. and Mrs. C. R. Killpack and two sons, Mr. and Mrs. Clarence Lemon, Mr. and Mrs. J. C. Lemon, and Jennie Lemon, Mr. and Mrs. Fred Olsen, Mr. and Mrs. Abe Conover, and Clell Cox.

Rochester—Mr. and Mrs. L. C. Moore and Mr. and Mrs. H. R. Huntsman and son.

Emery—Bishop and Mrs. A. Brinkerhog, Mr. and Mrs. Hans Jensen, Mr. and Mrs. E. H. Duzett, Mr. and Mrs. A. J. Broderick and son, Mr. and Mrs. I. A. Petty, Mr. and Mrs. Marenus Simonsen, Mr. and Mrs. G. E. Anderson, Mr. and Mrs. George Mortensen, Mr. and Mrs. D. H. Williams, and G. T. Olsen.

Utah County Farmers' Trip.

The educational tour of the Utah County farmers was conducted by the Utah County Farm Bureau. The committee in charge of the excursion consisted of County Agricultural Agent Clyde W. Lindsay of Provo, Roger W. Creer of Spanish Fork, W. J. Chadwick of American Fork, and James M. Kirkham of Lehi.

Forty-four automobiles made the start, and three others joined the party later in the day.

The first stop was made at the Winchester farm in Salt Lake County. On this farm 112 varieties of grains, grasses and vegetables were growing. Some of the varieties the farmer had never seen before.

The next stop was made at the Smith Bros. dairy farm, where the Island type of Jersey cattle are kept. At the Winder farm the excursionists saw the American type of Jersey cattle. At the State penitentiary they were shown the Guernsey type of dairy cattle, one of the finest herds to be found anywhere. Luncheon was served at the Salt Lake Commercial Club rooms, where the farmers were the guests of the Consolidated Wagon & Machine Company, Mr. Geo. T. Odell, manager of the company, in charge. Nearly all the directors of the company were present to help entertain the visitors.

The next stop was made at Bountiful, where Mr. E. E. Smith showed the excursionists sixty-five different varieties of grain that he had grown on his farm. They next visited a pumping plant at Bountiful, one of a large number by which the farmers irrigate their land. In Kaysville a demonstration was given of a corn binder working on the farm of Mr. Clark. Returning to town, peaches and lemonade were served by a number of Kaysville ladies.

At this point a committee from Ogden met the party, leading the way direct to the Ogden Packing & Provision Company, where they were shown the method and manner of killing, curing and packing live stock. Dutch lunch, for which this institution is famous, was served to the visiting farmers. From here they went to the State Industrial School. Here the juvenile band furnished music. Superintendent E. S. Hinckley gave a talk, telling how the institution was conducted. Water melons were served by the boys and girls. In the evening the entire company were guests of Manager Goss at the Orpheum theatre. In the morning a visit was made to the Utah Cereal Food Company, where they were shown how barley, wheat and other grains are made into food products.

Leaving Ogden the company visited the Potter farm and inspected a modern barn with all its equipments.

In Brigham City only a short stop was made, part of the farmers inspecting the Commercial Club rooms and many visiting the famous Knudson pumping plant. At Corinne the pure-bred Hereford cattle belonging to C. G. Adney were visited.

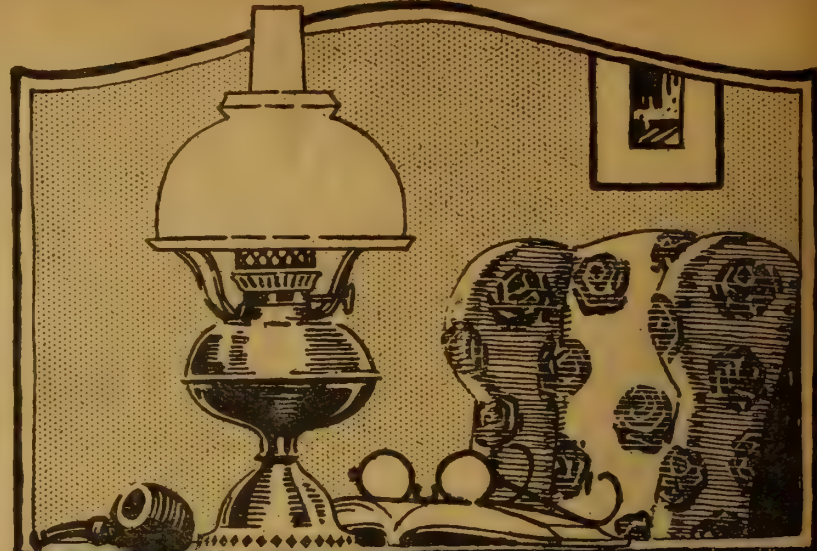
A reception committee from Garland met the visitors at Corinne. One stop was made before reaching Garland to visit the beet field of Mr. Holgren. At Garland the band was out to meet the visitors, who were taken to the Bear River Stake Tabernacle. Here a delicious luncheon was served. A short meeting in the tabernacle. Talks were made by Mayor Evans, M. H. Welling, C. L. Warnick and John T. Caine III. At Fielding a visit was made to President Welling's potato farm.

At Senator Hanson's farm they were shown pure-bred horses and sheep, and told of excellent returns from his farm.

The trip from here was over Bear River and through the dry farming section to Petersburg. The machine shops and farm equipment of Peterson Brothers were carefully studied.

Pres. E. G. Peterson of the Agricultural College and Pres. Owen of the Commercial Club, with a number of others met the farmers and, after waiting for a line up, a trip was made through Logan to the Agricultural College. Barns and equipment, live stock and poultry were inspected. A banquet was given the visitors at the College in the evening, President Peterson presiding, a large number of the visitors responding with short talks.

The next morning a stop was made at the Experimental Farm north of Logan. From here they went to Richmond and visited the dairy herds of Nelson Brothers, E. G. Wooley and J. W. Hendricks. The milk condensery plant was shown the visitors and the operations necessary for the manufacture of condensed milk. At the Ballamoar farm, owned by the Caine family, they were shown a number of pure-bred Jersey cattle and Berkshire hogs. Delicious luncheon was



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50 lb. sack (delivered
freight) \$3.50

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Associate yourself
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bank.

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this institution.

1912	\$3,200,000
1913	3,800,000
1914	4,500,000
1915	5,300,000
July, 1916	6,500,000

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\$3,300,00, MORE THAN
DOUBLED IN FOUR
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WALKER BANK BUILDING
SALT LAKE CITY

served on the lawn under shady trees to the farmers. Short talks were made by Senator Funk and John T. Caine II.

Here the touring farmers disbanded and returned home.

Among those who took part in the trip were:

Elmer Holdaway, Provo; Walter Holdaway, Provo; J. K. Allen, Provo; Jas. J. Hickman, Provo; William H. Reece, Payson; Samuel A. Smith and wife, Lehi; Cassil Smith, Lehi; Stella Clawson, Spanish Fork; Ralph D. Morgan, Spanish Fork; Roger W. Creer, Spanish Fork; John T. Caine, Logan; Ivern Payne, Provo; R. A. Hills, Provo Bench; Carl Farley, Ray V. Wentz, Provo; J. T. Preston, B. G. Webb, Lehi; E. Thorn, Springville; William F. McLeod, William McLeod, Santaquin; C. W. Houtz, William T. Tew, Jr., Mapleton; David L. Jones, Spanish Fork; George F. Carroll, A. Nelsen, Provo Bench; Raymond Fartridge, John Christensen, Provo; J. E. Clark, Payson; Grant Hampton, Salt Lake City; Ben Isaac, Spanish Fork; E. F. Palfreyman, J. F. Bringhurst, Springville; James Ganathay, American Fork; L. A. Thurstrupp, Payson; R. W. Meney, Spanish Fork; M. C. Maughan, Provo Bench; A. F. Galsford, James F. Pyffe, O. L. Kittinger, Thomas Jones, John Goodwin, Peter Johnson, Eugene Mason, Lehi; A. M. Carter, George A. Clark, Provo; M. A. Miner, Leland McKinzie, W. A. McKinzie, Springville; George James, John R. Stubbs, Provo; Elisha Peck, Lehi; William C. Rightrup, G. F. Nelson, Spanish Fork; John M. Cowan, S. E. Francom, Payson; William H. Neilsen, Spanish Fork; Clyde W. Lindsay, Provo; James M. Kirkham, Lehi; Alvin R. Green, Spanish Fork; George F. Furch, Lake Shore; John S. Davis, C. C. Creer, Spanish Fork; L. D. Racker, Lehi; W. G. McBride, Tooele; G. S. Gibbs, Salt Lake; J. R. Hinckley, Provo; Ashten Taylor, Springville; Thorn C. Miner, J. F. Smith, Provo; H. F. Johnson, Salt Lake; A. H. Shafford, Springville; George C. Hansen, Ed. Huntington, Spanish Fork; Frank H. Taylor, James F. Hiatt, John F. Terrort Payson; A. Carlos Schow, Frank Smith, Lehi; Lund, Pleasant Grove; Frank Smith, Lehi; Fred Nelsen, Will C. Johnson, Spanish Fork; Martin A. Clinger, W. A. Nuttall, A. L. Ehrlins, Provo; J. Henry Nebeker, Otto B. Enlendson, Payson; Elmer Huff, Lake Shore; E. A. Menlove, O. R. Thomas, Wilford Stubbs, James B. Ferguson, Provo; A. Anderson, B. D. Lott, Lehi; James Melderne, Beaver; Joseph E. Atkins, Lake Shore; N. C. Hicks, Provo; Fred Odell, Woods Cross; W. H. Chipman, John Jacklin, J. S. Beck, American Fork; W. J. Selman, Benjamin, B. N. Christensen, American Fork; J. G. Robertson, Spanish Fork; J. C. Haliday, Louis H. Lund, Pleasant Grove; W. A. Hunger, W. C. Loveridge, Archie Gardner, James Bushman, Wm. F. Gurney, W. W. Clark, A. L. Yates, Hyrum Anderson, Roy Davis, Peter Schow, Ruben Davis, C. L. Schow, Lehi.

Weber County Farmers

There were twenty-seven automobile loads of farmers from Weber County, coming from Eden, Liberty, Huntsville and other sections in and around Ogden. This excursion was conducted by the Weber County Farm Bureau, W. Preston Thomas, county agricultural agent, in charge.

The first stop was made at Bountiful to view a grain display. They visited the Guernsey herd of cattle at the State Penitentiary, returning to Salt Lake for luncheon. The Winchester farm was visited to see the great variety of grains, grasses and hogs. From here they went to Bingham Canyon to see how the copper mines are being developed in that camp. They were met at Bingham by C. W. Lindsay, C. L. Warnick, C. P. Warnick and James M. Kirkham, who escorted the party to Provo.

In the Pioneer Hall a banquet was given the visitors. A. P. Merrill, president of the commercial club, in charge, and Clyde W. Lindsay acting as toastmaster. The next morning they visited the Knight Woolen Mills, going from there to the State Mental Hospital to see the barns, buildings and dairy herds.

A trip over Mapleton Bench brought them to the Strawberry Reclamation Project. Following the high line canal, they went to Payson where

they visited Dixon's herd of Herefords. At Spanish Fork luncheon was served. Nephi L. Morris and Simon Bamberger both making short talks. They next visited the Cherry Hill Farm at Lake View, Holdaway from at Vineyard and Warnick farm at Manila. At Warnick's they were served cookies, lemonade and fruit. They saw Chipman's silo at American Fork, and were told how he fed silage to beef cattle at a profit.

At Lehi they were served watermelons, sandwiches and lemonade, going next to the big pumps at the head of Jordan river. Here the party disbanded, returning home.

Names of Farmers from Weber County who went on trip to Salt Lake and Utah Counties:

A. Ferrin, L. Sessions, David Chard, Wm. Southwick, M. Cook, Joseph Barlet, John Barlet, Wm. Barlet, Lewis Rawson, Davis Green, Francis Clark and wife, D. C. Walker and wife, David Burnett and wife, John Gould and wife, Joseph Ferrin and wife, Joseph Bachman, Geo. Stallings, A. Hoge, Clinton Rollins, Clyde Fuller, V. B. Stallings, M. Burnett, H. B. Stallings, Albert Gould, John Widdison, James Widdison, Thomas Fowles, J. R. Bues, G. C. Parker, T. M. Jones, Frank Belnap, John Read, R. E. Widdison, Ray Beasley, Albert Anderson, D. Green, Jos. Hull, A. Powers, Lee Powers, Jos. Higley, Jas. Manning, Heber Bues, John Moore, James Simpson, T. A. Lowe, John Lowe, Robert

(Continued on page 8)

The Utah Agricultural College

LOGAN, UTAH.

Utah's Greatest Need is efficiently trained men and women. The demand for these commodities is so keen that the supply is wholly inadequate. The demands of the Twentieth Century are such that men and women, to reach the greatest success, must be college trained.

The Great Opportunity of Utah's Youth lies in the direction of intellectual development. The Utah Agricultural College aims to call into existence all the latent human resources in Utah and the Intermountain West—the co-ordination of the work of mind, soul and hand, and the dignifying of the ordinary work of the world.

School Begins On September 19

A catalog and illustrated circular will be mailed upon request. A personal letter to the President is always welcome and will be given prompt attention.

Address: The President, Utah Agricultural College, Logan, Utah.

If you want to get the best in type-writing as well as everything else in the line of commercial education you should attend our school.

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New students may enroll at any time.

Positions Guaranteed

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SALT LAKE CITY



BAND INSTRUMENTS

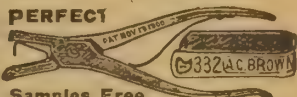
World's best. Mention this magazine and ask for catalog, terms and 6-day trial offer.

DAYNES-BEEBE MUSIC CO. SALT LAKE CITY

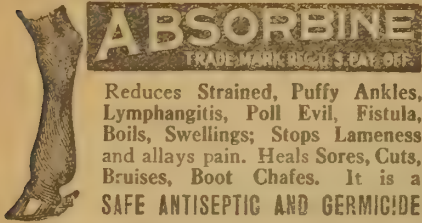


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Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is a **SAFE ANTISEPTIC AND GERMICIDE**

Does not blister or remove the hair and horse can be worked. Pleasant to use. \$2.00 a bottle, delivered. Describe your case for special instructions and Book 5 M free. **ABSORBINE, JR.**, antiseptic liniment for mankind, reduces Strains, Painful, Knotted, Swollen Veins. Concentrated—only a few drops required at an application. Price \$1 per bottle at dealers or delivered. **W. F. YOUNG, P.D.F., 142 Temple St., Springfield, Mass.**



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Stops friction. Makes a perfect bearing surface.

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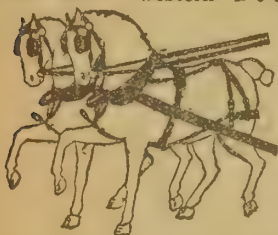


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One Man
One Team

THE BEST \$45.00 strictly all oak tanned western Double Team Harness on earth with breeching and collars for



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Hame tugs, 1½ inch, with three loops and patent buckle. Traces 2½ inches solid single ply, with cockeyes.

THE FRED MUELLER SADDLE & HARNESS CO.,
1413-15-17-19 Larimer St.,
DENVER, COLO.

Mention Utah Farmer when you write

A FARM REPAIR SHOP

(Continued from page 3)

it. How simple! You go to college where there are forges, benches, lathes, and all the tools imaginable to go with them; everything is electrically driven; a set of tools all to yourself in each department and a competent instructor at your disposal all the time. A paradise for a boy who loves to make things! When the old farmers see the shops and equipment the expression follows! "Nothing like this when we were boys." And they are right. There is no doubt in my mind that the cheapest and quickest way for a farmer or his boy to learn to use tools is to attend a school that is prepared to give instruction in mechanical work, and I know of no better place than the Utah Agricultural College.

THE OLD MAN

By Robert J. Burdette.

Ichabod, my boy, methought I heard you speak of your father this morning as "the old man." You are eighteen years of age, are you not? Just so.

That is the age when callow youth has its first attack of bighead. You imagine at this moment that you know it all. I observed by the cut of your trousers, the angle of your hat, the tip of your head, the flavor of your breath, the style of your toothpick shoes, and the swagger of your walk, that you are badly gone on yourself.

This is an error of youth which your uncle can overlook; but it pains me sorely to hear you speak in terms of disrespect of one you should never mention save by the sacred name "father."

He may not be up to your style in the modern art of making a fool of himself, but ten to one he forgets more in a week than you will ever know.

He may not enjoy smoking gutter-snipes chopped fine and inclosed in delicate tissue paper, but he has borne a good many hard knocks for your sake, and is entitled to all the reverence your shallow brain can muster.

By and by, after you are through knowing it all, and begin to learn something, you will be ashamed to look in the glass and wonder where the fool-killer kept himself when you were ripe for the sacrifice.

And then, when the "old man" grows tired of the journey and stops to rest, and you fold his hands across his bosom and take a last look at a face that has grown beautiful in death, you will feel a sting of regret that you ever spoke of him in so grossly disrespectful a manner; and when other sprouts of imbecility use the language that so delighted you in the germinal period of manhood, you will feel like chasing them with a thick stick and crushing their skulls to see if there is any brain tissue on the inside.

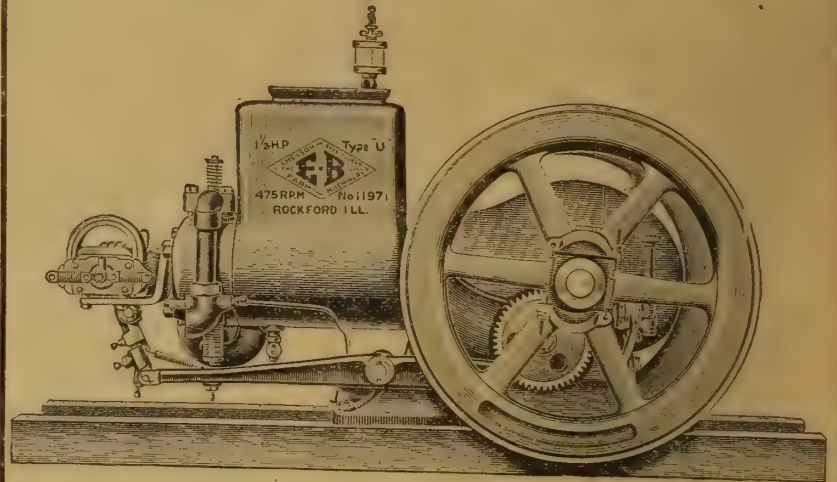
TWO BIG EVENTS

Utah State Fair and Fall Conference
L. D. S. Salt Lake City, Sept. 30th to Oct. 8th, 1916.

Low excursion rates via Salt Lake Route on sale Nephi and Tintic, and North September 30th to October 8th, inc. Good returning October 12th. All other points on sale September 29th to October 7th, inc. Good returning until October 15th. Extra sleepers and day coaches for this occasion.

The E. B. Gas Engine

MADE TO DO THE HARD WORK ON YOUR FARM



The E-B Gas Engine

THE E-B engine is cast in three sections. Should the cylinder freeze up and the jacket crack, you can replace the broken part instead of buying a new engine. The cylinder is water jacketed from end to end, providing against heating of any parts.

Vertical valves insure perfect seating, so all compression is retained and no power is lost. E-B engines develop "More Power Per Gallon"

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OPENED JAN. 1ST, 1913



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WHEN IN LOS ANGELES STOP at the NEW FIREPROOF HOTEL NORTHERN EUROPEAN
200 OUTSIDE ROOMS
150 WITH BATH
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Cement Pipe Molds FOR MAKING IRRIGATION DRAIN and SEWER PIPE

K. T. Pipe Molds are the outgrowth of many years of experience in the successful manufacture of cement pipe—the one perfect water distributor—Efficient, Economical, Everlasting, and not affected by either heat or freezing.

These molds make it possible for you to obtain cement pipe economically—no matter where you may be located.

If you are interested in the subject of either Irrigation, Drain or Sewer Pipe, write for our special Cement Pipe literature—it will save you money.

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"Originators of the Valve System of Irrigation."

"Velvet" for Dairymen

A new book which describes a great invention—the only Separator that will skim clean under varying conditions of speed. Government tests prove that nineteen out of twenty separators are turned below normal speed, and with any other separator but a "Suction-feed" cream escapes in the skim milk.

Now, you turn that loss into profit without added expense. We call this new profit "velvet." Our new separator safeguards you from cream losses. No matter whether you turn faster or slower than the regulation speed, you always do perfect skimming with

THE NEW SHARPLES SUCTION-FEED CREAM SEPARATOR

At widely varying speeds it delivers cream of an even thickness that makes quality butter. Capacity increases as you turn faster so you can get through separating quicker when in a hurry.

The new "Suction-feed" has the same simple tubular bowl as the famous Sharples Tubular Separator. There is no mechanism in the Bowl—nothing to get out of order and no disks to wash. The entire machine can be taken apart and thoroughly cleaned in a few minutes.

The top of the supply can is 24 inches above the floor. You can fill it easily without hard lifting. The entire machine is so simply and sturdily constructed that it will do perfect work for years.

Note Especially:

1. The new Sharples insures from 5 to 15% more cream under average conditions, and often doubles profits.
2. Skims equally clean at widely varying speeds.
3. Delivers smooth, velvety cream of uniform density at all speeds.
4. Capacity increased by simply turning crank faster.

Write today for our book, "Velvet" for Dairymen, ask for free trial offer if you wish it. Address Dept. 104.



See how easily the supply can is filled

The Sharples Separator Co.

Jobbers for Utah, A. L. Brewer Dairy Supply Co., Ogden, Utah.

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GREEN CONCRETE MIXERS

No matter how small the job all concrete should be thoroughly mixed.

The old method of shoveling is tiresome from a physical standpoint and is very unsatisfactory for consistent mixing.

Our foot, steam or gasoline power mixers will solve the problem for you.

Made in several sizes and endorsed by all who have used them. Made in Utah.

Write for information and bulletins. GREEN MACHINERY and MFG. CO. American Building 338 So. Main St. First Building north of Post-Office Salt Lake City Utah



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When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

LEARNING FROM FARMERS

(Continued from page 5)

Munn, W. McCloy, Geo. Parker, H. J. Garner, Fred Wheeler, F. M. Thomas, M. Thompson, G. Thompson, L. P. Deem, Geo. Moyes, Wm. Rhead, Ben Wayment, J. J. Chirstensen, Fred Palmer, C. E. Palmer, Joseph Singleton, Oscar Sharp, E. Taylor, O. Richardson, W. A. Kerr, A. M. Christensen, Charles, Taylor, J. M. Thomas, J. A. Child, W. Griffith, W. Gawall, Geo. Dasson, Robert Hamlin, Joseph Peterson, Lee Bybee, Ben Thompson, Mr. Firth, P. F. McFarland, James Etherington, J. W. Gibson, Ed. Charlton, Joseph Blance, W. C. Hunter, Ray Hunter, Geo. Heslop, Ed. Barnes, E. Peterson, A. Green, Wm. Green, Wm. Jardine, James Hunter, John Hipwell, J. R. McFarland, W. A. McFarland, E. Hadley, Joseph Hogge, John Hall, Wm. Hall, Milton Hall, L. H. Froerer, H. Grow, A. H. Garner, M. Lofgreen, C. S. Woods, Mr. Parkinson, Wilford Taylor, O. Stromburg, J. Jespersen, E. Jensen, Peter Jensen, Peter Johanson, M. Johanson, J. Winters, Frank Bingham, W. N. McEntyre, E. Garlick, Jos. Fisher, Ward Fisher, C. A. Growberry, W. Taylor, T. E. Powell, E. S. Hinckley, James M. Thomas, Andrew Agreen, Charles Smith, N. Chugg, Peter Shermer, C. Stone, and Victor Reno.

SUGAR BEET SEED

As the result of thirteen years of investigation of sugar beet problems, carried on at the Experiment Station of the Utah Agricultural College certain conclusions of importance can be drawn, according to an article written by Dr. F. S. Harris, Director of the Station, and Prof. J. C. Hogenson, State Leader of Junior Vocational Work, and appearing in a recent issue of Genetics, a periodical devoted to problems of heredity and variation. The probable conclusions to be drawn from these investigations are as follows:

It would seem that the percentage of sugar in the beet root increases with the size of the beet, that is, that the smaller beets tend to have a higher percentage of sugar than the larger ones.

There is no relation apparent between the percentage of sugar in the mother beet and the weight of seed produced.

The higher sugar beet plants produce more seed than the lower plants.

On the average, large beets yield more seed than small ones.

The sugar beet plants having most stems produce the largest quantity of seed.

The yield of sugar is somewhat higher in beets requiring a longer time to mature.

There is a tendency for greater seed yield to accompany a large number of leaves on the plant.

The taller sugar beet plants require a slightly longer time to mature than the shorter ones.

The higher the sugar content of the mother beet the less time is required to mature the seed. As the mother beet increases in sugar there is a tendency for more leaves to grow on each seed stalk.

Touching on the subject of how Noah spent his time in the ark, a lady teacher ventured the opinion that he did some fishing.

The Bright Child joined in the conversation, saying, "He couldn't do much fishing with only two worms."—Tit-Bits.

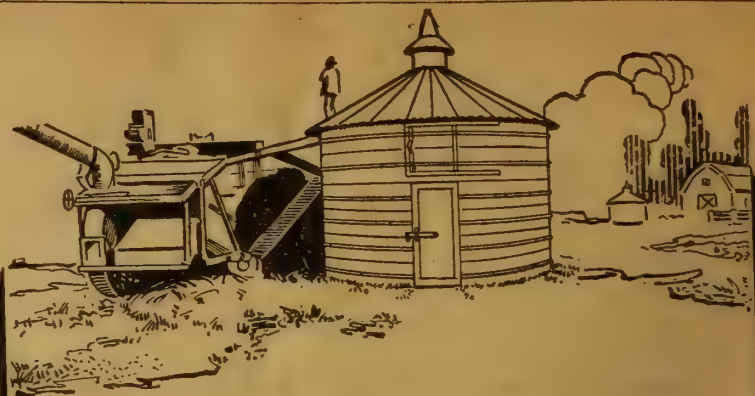
BLUFF THAT FAILED

Visitor (at private hospital)—Can I see Lieutenant Barker, please?

Matron—We do not allow ordinary visiting. May I ask if you're a relative?

Visitor (boldly)—Oh, yes! I'm his sister.

Matron—Dear me! I'm very glad to meet you. I'm his mother.—Punch.



Thresh Direct Into Butler Bins

One of the many superior points of Butler Bins is their height, just right for receiving grain from the separator, eliminating extra labor and time of men and horses during the busy threshing season.

The superiority of Butler Bins is easily seen by anyone who will compare them with other makes, or will study our booklet, which your dealer will gladly furnish or we will mail free.

Store Your Wheat For Profit Use Butler Bins For Safety

Butler Bins have often paid for themselves several times over in a single season, and you can store your grain for the high market with perfect safety because Butler Bins are absolutely rat, fire, and weather proof. Any agricultural journal or other authority tells the folly of storing in wooden bins. Butler Bins will outlast any wooden bin, and keep your grain in much better condition. Get our "Letters from Satisfied Users."

Many Special Features

Full capacities, strong roof, large manhole, large hinged door, small sliding door for easy scooping, removable slats, shoveling board, and strengthening corrugations, are some of the superior points of Butler Bins. These are fully shown and explained in our free booklet.

Before buying any grain bin, get the booklet, mailed free on request. If your dealer can't supply you, write today.

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UTAH-IDAHO-WYOMING-NEVADA

University of Utah

Salt Lake City, Utah

Instruction begins Monday, September 18th.

Registration of students and entrance examinations on Thursday, Friday, Saturday, September 14th, 15th and 16th.

Registration fee during the three registration days—September 14th, 15th and 16th—\$10.00; after that \$12.00.

Proper buildings with spacious laboratories replete with modern equipment, and a Faculty composed of graduates from the leading universities of the land, are AT YOUR SERVICE.

Courses are offered that prepare for almost any vocation.

The credits of the University of Utah are accepted in full by the best universities in the United States.

Full information sent upon request.

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Location

On the main line of the Oregon Short Line, 95 miles north of Ogden and 40 miles south of Pocatello.

Soil

The soil is a rich sandy loam, which in its natural state is covered with a heavy growth of black sage. This type of soil has been proven to be equal of any in the world for fertility.

Climate

The climate is similar to that of Cache Valley, which immediately adjoins Marsh Valley on the south. There are no extremes of temperature.

Markets

Stock, grain and produce are shipped to Utah, Montana and Pacific Coast points. The local demand is greater than the supply. There are no better markets any place in the country than those tributary to Downey.

COME TO DOWNEY

SEPTEMBER 22 and 23

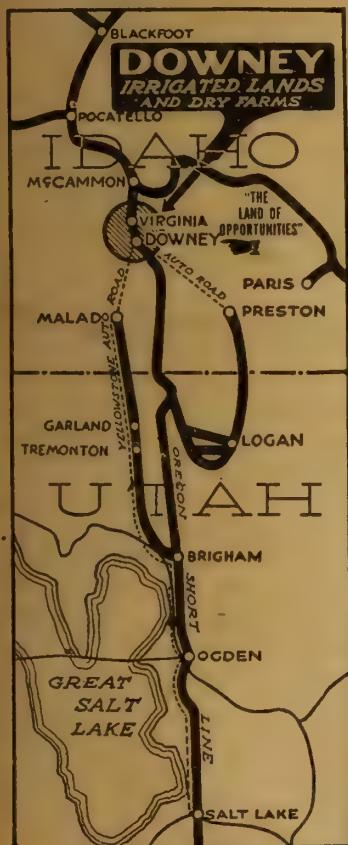
and attend the big

BANNOCK COUNTY FAIR.

You'll see some of the best agricultural and livestock exhibits ever displayed.

Special Railroad Rates.

Study this Map



Irrigating Water

An abundance of irrigating water is furnished through the big canal from the fine modern reservoir on the Portneuff river. The main canal is 30 feet wide, 4½ feet deep and 26 miles long.

Culinary Water

The culinary water, found at a depth of 10 to 35 feet from the surface, is of a very superior quality and in great abundance.

Why You Should Buy Now

A sugar factory will soon be built near Downey. By getting in TODAY you will be buying at "ground floor" prices. The Downey and Marsh Valley country is growing rapidly. Prices will never be so low again.

Come in, write or telephone and arrange to see for yourself. Get our free illustrated Downey folder. It is yours for the asking.

\$60 to \$100 An Acre

including a full water supply from the big Canal system, is the average price of the best irrigated farming lands. Most of the farms are in 40-acre units. In the main they are fully developed farms with alfalfa, grain and garden products now growing.

Terms

The first payment on a 40-acre farm is from \$200 up. The balance can be paid in 10 equal yearly payments. Interest at only 6 per cent on the unpaid balance. Dry farms \$35 to \$65 an acre.

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"Land Merchants"
58 Main street, Salt Lake City, Utah.
Please send illustrated Downey folder.
Name
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I am interested in buying
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Kimball & Richards "Land Merchants"

EXCLUSIVE AGENTS

56 and 58 Main Street

Salt Lake City, Utah

HOME

CAN NOW FOR WINTER USE
Missouri College of Agriculture.

Whole tomatoes, green peppers, spinach, and corn on the cob every day next winter! Doesn't the thought suggest a pleasant departure from too much meat in the diet?

Every woman on the farm should can surplus fruits and vegetables during the summer months for winter use. By so doing, the cost of a valuable food will be decreased and meals during the winter will be made more appetizing. Fruits and vegetables give variety to the diet and supply certain food materials which are necessary to maintain health. They do not leave us in need of a spring tonic.

In the day of our grandmothers the canning of vegetables was little understood and results were seldom successful. We know today that foods spoil from the action of small organisms called bacteria, which float in the air around us and we know how to kill them. If these are killed in the process of canning and the jars sealed airtight, food will keep indefinitely. Different kinds of bacteria are found in different kinds of foods. Some kinds require a higher temperature to kill them than others and for this rea-

son some fruits and vegetables must be cooked longer than others during the canning process.

For the beginner the water-bath canner is recommended as the simplest form. It can be arranged in any home with but small expense. It consists of a containing vessel with a rack and a cover. A wash boiler may be used. A rack may be made of thin boards or heavy wire. It should be raised three-fourths of an inch from the bottom of the boiler or enough so that water can circulate freely under the jars. This prevents the jars from getting too hot. Water should be an inch over the tops of the jars.

Before placing the jars in the boiler, screw the top down as tightly as possible with thumb and little finger. If screwed too tightly, expansion will cause the jars to break. The cans are removed most easily by means of a can lifter.

PORK CAKE A GOOD
SUBSTITUTE FOR FRUIT CAKE

Pork cake is a very good substitute for fruit cake. It is moist, keeps well and requires no butter, milk or eggs. The recipe:

- 1 pound fat salt pork.
- 1 pint boiling water.
- 2 cups sugar.
- 1 cup molasses.
- 1 teaspoonful soda.
- 1 teaspoonful cloves.
- 2 teaspoonfuls cinnamon.
- 1 pound currants.
- 1 pound raisins.
- $\frac{1}{4}$ pound citron.
- flour.

First prepare the fruit. Wash and dry the currants. Wash, seed and chop the raisins. Shred the citron. Have the pork entirely free from lean and rind. Chop very fine or put through the food chopper, using the finest cutter. Pour the boiling water over the chopped pork, add the sugar, mix the soda with the molasses and add the molasses. Mix the spices with part of the flour and stir into the mixture. Add the fruit and then the rest of the flour.

No definite amount of flour is given but the batter should be as thick as one can stir. It is well to try a sample cake as one seldom uses enough flour the first time.

Bake in a moderate oven from three to four hours, depending on the size of the pans used, or steam three hours and bake one.—Charlotte E. Carpenter, Colorado A. C.

CARRYING WATER

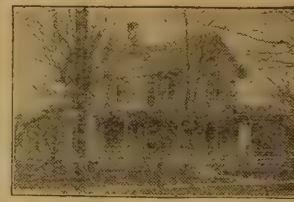
Henrietta Kolshorn, Wyoming A. C.
A Wyoming woman carried two hundred forty-four horses, each weighing two thousand pounds, and walked half way across the state!

Yes, she did. You do not believe it? Well, here are the facts in the case:

This woman lives in a ranch house in Wyoming. She has a large family, and does her own work. One of her hardest tasks is to keep her family and house clean. The water she uses in her house must be carried in a bucket from a well. I have used the data she has given me, and here are all the figures:

Distance of the well from house 50 feet
Distance across porch and kitchen 20 feet
Distance from table to place of pouring slops 70 feet

Each bucket of water was carried 140 feet
No. of buckets used by family on the average each day, in-



Last year we remodeled our home and installed a Caloric Pipeless Furnace. Our house is large and in the coldest weather we enjoy comfort. We were able to use our bathroom with comfort in coldest weather. We did not have a single frozen pipe. We used less fuel than we would with any other make. In remodeling a house there is no better furnace.—E. L. Sindel, Delta, Ohio.

This is One of Thousands

of letters from satisfied users of the Caloric Pipeless Furnace from all over the country. City convenience and comfort are yours with very little expense. You do not have to cut your house up for pipes because the Caloric heats thoroughly with just one register. The



The Original Patented Pipeless Furnace

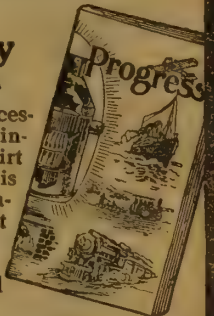
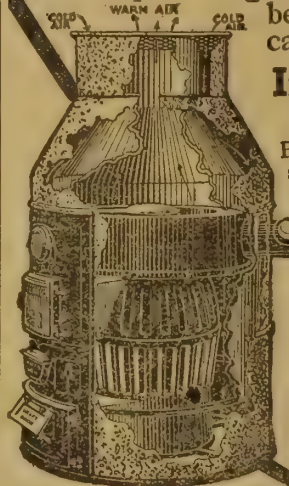
burns coal, coke and wood and is guaranteed to save 35% of your fuel. In a short time it pays for itself. There are no pipes to waste heat or cause a fire and the air in the house is kept in constant circulation which is an aid to your health. The triple casing on the Caloric prevents the cellar from becoming heated, thus saving produce and canned goods.

Installed In One Day
In Any House New or Old

Because there is only one hole necessary to be cut, this furnace can be installed in quick time, without dirt trouble or inconvenience. It is guaranteed against defective material or workmanship. If it does not prove satisfactory let us know and we shall make it right. The firepot is guaranteed for five years.

Ask Your Dealer or Write for FREE Book
If your dealer cannot show you the Caloric Pipeless Furnace, send your name and address and we will immediately send you our free book. Don't delay. Write now.

The Monitor Stove & Range Co.
3314 Gest St. Cincinnati, Ohio



STARS MAKE DOLLARS

If you're a man of energy and business ability, here's an opening worth consideration. There is a great demand for drilled water wells, and there's large sure profits to the man with a

STAR DRILLING MACHINE

Portable—Steam or Gasoline
Best by test. Low in price, high in practical worth. You can make it pay for itself and earn dividends all the time. Look into this! Sold on payment plan if desired.

Our 140-page catalogue describes 21 different Star Drilling Machines. Write and we'll mail you this book, which will point the way to money making. Write today.

Star Drilling Machine Co.
642 Washington St.
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One of Our 21 Stars

For Greatest Satisfaction Use
DOUBLE SERVICE
Automobile Tires
Guaranteed 7,000 Miles Service

Absolutely Punctureproof

Double Service Tires are made double the thickness of the best standard make tires.

This 100% greater wearing surface naturally gives that much more mileage and service. The average of 12 miles of tough

fabric and one inch surface tread rubber makes these tires absolutely punctureproof.

These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—the air space and pressure being the same.

They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use in the U. S. government and European War service.

Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer:

PRICES

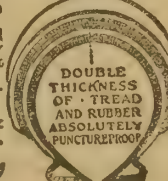
Tires Tubes		Tires Tubes	
30x3 in.	\$ 8.60 \$2.30	36x4 in.	\$17.45 \$4.05
30x3 1/2 in.	10.55 2.40	36x4 1/2 in.	21.20 5.00
32x3 1/2 in.	12.75 3.20	38x4 1/2 in.	22.50 5.75
33x4 in.	15.75 4.20	38x4 3/4 in.	23.00 6.20
34x4 in.	16.70 4.55	38x5 in.	26.30 6.50

All other sizes not included in above list also furnished. Non-skids at 10% additional.

Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.

Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Descriptive folder upon request. Write for it.

Double Service Tire & Rubber Co., Akron, O. Dept.



Fine Improved Irrigated Farm

for sale in South Eastern Idaho at a

Great Bargain
Fully Paid Up Water Right

in one of the best canals in the State. 160 acres all fenced and in cultivation.

REASONABLE TERMS

Long time and low interest above cash payment. Low price for limited time—must be snapped up quick.

Miller & Viele

803-807 Kearns Building

Salt Lake City

Try This Ditcher at Our Risk

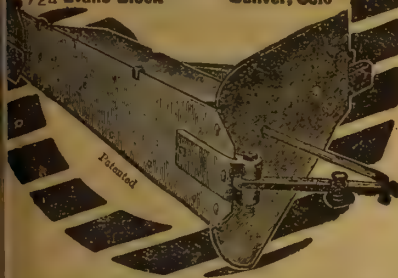
WE want you to know. Don't take our word. Try a Martin 10 days. It digs ditches, makes and cleans irrigation laterals, throws up and levels levees, grades roads, greatest dirt mover ever built. Low in cost—good for lifetime use.

THE Martin
1896

FARM DITCHER

saves money and a lot of the hard work in making ditches. Ideal for irrigation farmers. Made of plowshare steel. Guaranteed. Reversible. Adjustable for narrow and wide cutting. 10 days' Trial. Write for free book. Don't put it off.

DWENSBORO DITCHER AND GRADER COMPANY (Inc.)
724 Evans Block Denver, Colo.



KEROSENE
at 6 cents a gallon used in OTTAWA Engines makes more dependable power than 22 cent gasoline in any engine. Sizes 1 1/4 to 22 H.P. Sold direct. 3 months trial. 10-year guarantee. Over a million H.P. in use today. Write for terms. Engine book free. OTTAWA MFG. CO., 12 King Street, Ottawa, Kansas.

Good Fruit, Good Sugar---Good Preserves

With the gradual increase in the cost of all foodstuffs, housewives will find that with a liberal quantity of canned fruit in the cellar they will have done much to relieve the high cost of living this winter.

There's plenty of fruit to be canned; tons and tons will be wasted this year if the housewives do not conserve it. You pay for all that is wasted, with high prices.

Can plenty of fruit—start today. Select good fruit, use Utah-Idaho Sugar and your preserves will be O. K.

UTAH-IDAHO SUGAR
ABSOLUTELY PURE

cluding water for wash day and family baths20
One bucket of water was carried daily or a little more than one-half mile— 140x20—2,800 feet
No. of miles the bucket was carried during the year or one-half way across the State of Wyoming— 365x1/2—182 1/2 miles
The weight of bucket and water 30 lbs.
Weight of 20 buckets 30x20—600 lbs.
Weight each day in carrying water in and slops out of the house600x2—1,200 lbs.
Weight for one year would be— 1,200x365 or 448,000 lbs.
448,000—2,000—244

The woman then carried the weight of two hundred forty-four horses, each weighing two thousand pounds, or the weight of five hundred sixty cows, each weighing eight hundred pounds, or over the weight of one cow from the well to the house each day.

Some houses have the well at a still greater distance from the house and not a few wells do not have a pump, but instead a bucket on a rope, or worse still, on a well pole. Thus making it necessary for the women to spend more time and energy in drawing the water. However, this woman does have a pump, but it takes three minutes to go to the well, pump the water, and return, when the weather is fair. When it is stormy and cold, it requires two minutes extra to put on and remove rubbers, mittens, coat and cap. Therefore, she spends one hour each fair day carrying the water, and one and two-thirds hours a day, when the weather is stormy.

If she sleeps eight hours a day, and she should do so, she spends from one-tenth to one-eighth of her life each year carrying water. About one and one-half months of each year she is tied to the water bucket. How much is her strength worth to her husband and her children? How much is the time worth in dollars and cents, if she must hire it done by a servant girl? For what price would the average man take the job?

The woman who spends her life in a ranch house has many duties, but the one thing that saps her strength and bends her back most is that of carrying heavy buckets of water day after day and year after year. The heavy labor causes the light to die out of her eyes and the vigor and enthusiasm of life is lost. She becomes old before her time. Hope dies out of her heart and her nerves cry out for rest.

The aged woman who has had the care and work of a family for years should save her strength for better purposes, and the young mother needs her energy in caring for her husband and her children.

You say, "Let the children do it." "No."

Many a country child has a curved spine because it has been compelled to carry water at an age when the frail bones were far too weak for the heavy task.

No farmer can afford to live in a house that does not have an adequate supply of water. Pumps are far cheaper than wives and doctor bills.

After reading this article, take a pencil and paper and figure out just how many pounds of water are used in your home each year and the distance of carrying it into the house and out again. Then figure the cost of placing running water or a pump in the house. After that, answer this question carefully: Can you afford to have your water carried?

Parowax

THE ORIGINAL FLAVOR

is retained when Parowax is used in preserving fruit.

Most housewives know this and use only Parowax when they "put up" fruit, because of its purity and fineness. It prevents mold and fermentation by making jelly glasses and jars air tight.

Parowax is guaranteed under the pure Food and Drugs Act. It is sold by reliable dealers in one pound cartons.

If bees knew about Parowax they'd have more time to make honey

THE CONTINENTAL OIL COMPANY

(A Colorado Corporation)

Denver Butte Pueblo Salt Lake City Cheyenne
Albuquerque Boise



UTAH STATE FAIR

SALT LAKE CITY

SEPT. 30 - OCT. 7

8 FULL DAYS

Better and bigger than ever before

Sensational Amusement Attractions

WORLD FAMOUS DIVING GIRLS

REDUCED RATES ON ALL RAILROADS

ADMISSION

ADULTS 25¢ CHILDREN 10¢

Send in your orders for Butter Wrappers to The Utah Farmer.

The Right Gas Engine Lubricant



If your engine is over six horse power, you need a heavy, non-carbonizing lubricant.

Gamut Gas Engine Oil---Heavy

is the oil you should use to get 100 per cent efficiency. It gives the desired results. Makes good at all temperatures.

Utah Oil Refining Co.

Refiners
Salt Lake City, Utah

FOR SALE

205 acres unimproved on Green River and San Rafael 18 miles below town. Altitude 3980, part can be irrigated by gravity, plenty of water and timber and open range where stock graze winter and summer. Fine Soda spring on land. Ideal for home and ranch.

M. OPPENHEIMER

Elgin

Utah

RELIABLE FARM BARGAINS.

80 acres excellent land, with first-class water right, southern Idaho, close to a good town and on the main line of the railroad. \$800 per acre. 10 per cent down and ten years on the balance at 6 per cent interest. Can sell in forties.

All or part of 180 acres in the Bear River valley at \$30 per acre. This land is under the canal. Can be dry farmed for five years, at the end of which time water will be sold for it at \$50 per acre.

113 acres between Garland and Tremonton. All irrigated from the Bear River canal. This land can be had on excellent terms at \$120 per acre.

160 acres two and one-half miles south of Saratoga Springs. There is an \$1800 mortgage on this property and the owner will take \$500 cash for his interest, the purchaser to assume the mortgage. 20 acres under the canal.

12 acres at Springville. 5-room brick home, large barn large granary and other outbuildings, city water and electric light. This place recently sold for \$7500. It is being sacrificed now on account of ill health for \$4000, 25 per cent down and balance on reasonable terms. A big bargain.

KIMBALL & RICHARDS,
"Land Merchants."
56-58 Main Street,
Salt Lake City, Utah.

Phone Wasatch 963.

Live Stock

SUPPLY FARM ANIMALS WITH FRESH WATER

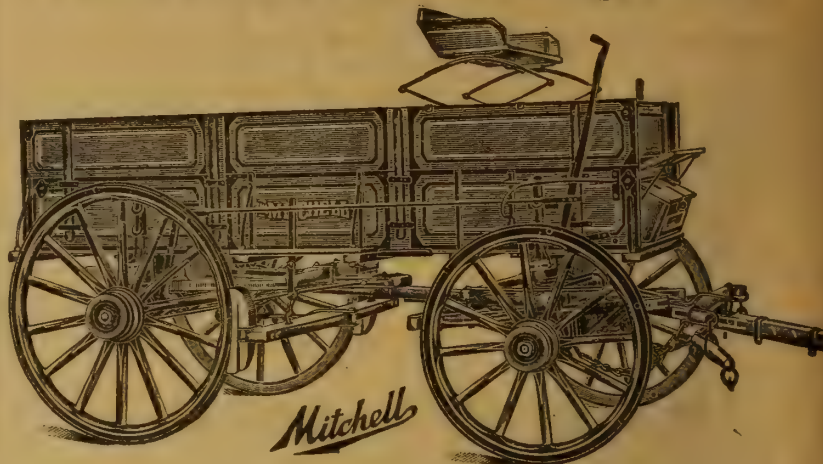
It is a well known fact that our domesticated animals will live much longer without solid food than without water. This is especially true during the hot and dry months of the late summer and early autumn. At this season of the year creeks begin to dry up, springs cease to flow and the water supply in many cases is reduced to conditions where the animals are forced to exist upon anything but potable water as found in mud puddles along the creeks, and in ponds filled with surface water accumulated in the early part of the year. Filthy water as well as too small a quantity of fresh water has been known to cause disturbances in the animal body. These disturbances are manifested usually by a lack of appetite for solid foods due to gastric and intestinal troubles. Digestive processes such as mastication, digestion in stomach and intestines, absorption and assimilation are hindered by too small a supply of water in the body. Then, too, when ample water is not supplied to an animal the intestines are not properly flushed and the waste matter remains in them too long.

It may be said with a reasonable degree of safety that in general water makes up somewhat more than one-half of the weight of the bodies of our domesticated animals, the percentage varying with the species, age, and the condition of the animals. Water serves still another useful function, namely; that of assisting in the physical heat regulation of the animal body. (By physical regulation we mean the regulation of the emission of heat and from the animal organism through conduction, radiation, evaporation of water.) During the hot summer days more water is required in the process of heat regulation for it serves as a cooling agent in as much as a large amount of the heat of the animal body is absorbed in converting the water into the vapor given off by the lungs and skin.

In dry lot feeding during this season of the year when little or no succulent feeds are allowed the animals the water supply becomes a very serious factor. No doubt, every feeder has noticed that animals fed on a highly nitrogenous ration required more water than those fed on a carbonaceous ration. This is perhaps due to the fact that starchy feeds yield a larger amount of water when entirely oxidized, while the nitrogenous or protein feeds are rarely so completely oxidized in the animal body and yield a smaller amount of water. Then, too, the laxative nature of some of the feeds high in protein makes a greater demand on the water supply than the starchy and less laxative feeds. Under normal conditions domestic animals require a fairly uniform quantity of water for each pound of dry matter consumed. If, however, conditions are not normal, such as is the case in hot summer and fall months, more water is required in order that the proper adjustment to the thermal environment may be accomplished by regulating the heat emission.

If the temperature of the animal body is not above normal (as when caused by violent exercise, etc.) it is quite safe to allow the animal free access to water as it is not likely that it will take too much unless it is fed salt irregularly or when forced to

Mitchell Wagons



The Monarch of the Road—all sizes, and equipment for every purpose—on hand here—full information upon request.

Utah Implement-Vehicle Co.

SALT LAKE

Answers the Hunger Call of All

Some breads appeal to one taste. Some to another. Few appeal to all tastes. The exception is Royal Table Queen. This loaf's rich wheaty flavor—nature's kiss of goodness—satisfies every taste. The hunger call of all is answered by this splendid bread.

We are happy to think that we have been able to produce such bread for you. We put much effort and many years' time into the development of—



**ROYAL
TABLE QUEEN**
"The Perfect Bread"



That's why it's so excellent. And to us, this is more than a profit, more than fame, more than public decoration.

Ere long Royal Table Queen will find place in every home because of its unrivaled goodness. After eating it a week or ten days, the family will insist on it—always. Let us suggest that you commence serving it at once.

Royal Baking Co., Salt Lake City, Utah

take large quantities of water through watery feeds.

Fresh and cool water supplied in ample amount will serve the very useful purpose of eliminating many of the digestive disturbance often complained of by feeders of domestic animals. Unless the digestive agencies are properly functioning the best results can by no means be realized. And since water, which is one of the most abundant elements we have, serves such a useful purpose it should be given serious consideration particularly at this time of the year—J. E. Nordby, Animal Husbandry Dept.



Thomas A. Edison
Daynes-Beebe Music Co.
Salt Lake City, Utah

EDISON

Phonographs and Records. Mention the magazine and ask for complete EDISON catalogs, prices and terms. Mailed FREE and POSTPAID.

CREAM WANTED

Highest Market
prices----correct
tests---- prompt
settlements

We have some excellent territory open
for agents; write us immediately.

The Nelson-Ricks Creamery Co.

Eccles Ave. Salt Lake

Manufacturers of Banquet Better Butter

THE WAY IT WORKS

When the birds first sing, and alarm
clocks ring,
I arouse from my slumbers deep,
And, so weary, rise, with dejected sighs
That I only might lie and sleep.

When the sun rides high in the noon-
day sky
To my care-burdened mind will creep
The disturbing thought, coming all un-
sought,
"If I only could go to sleep!"

When the daylight fades into evening
shades
Comes content to me, sweet and
deep,—
As aside I lay the day's work I say,
"Well, at last I can go to sleep!"

But the hour of nine finds me feeling
fine,
At eleven or twelve I weep
That with so much fun only well begun
I must drag me to bed to sleep.
—Margaret Wade.

Feed the pig all he can eat without
squealing. This can be done only by
watching him eat and knowing just
how much he needs.

SHEET MUSIC

Only Ten Cents a Copy

Mention this magazine and ask for FREE catalog
of over 1800 selections, vocal and instrumental

DAYNES-BEEBE MUSIC CO., Salt Lake

Farm Disinfectant Carsolium Dip

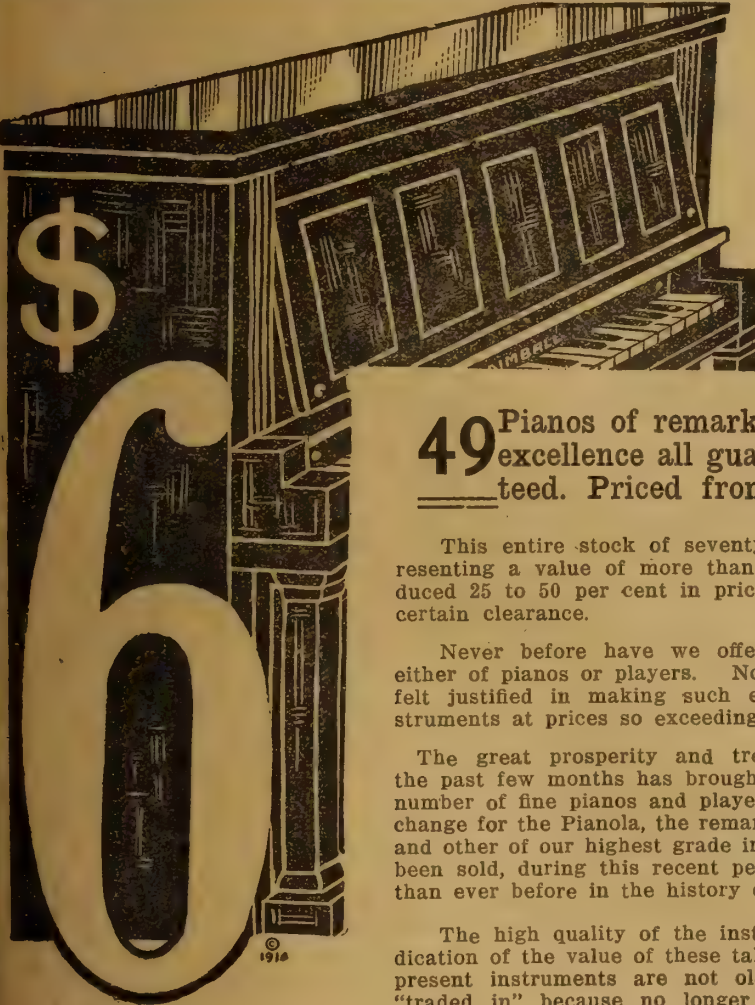
ANSWERS

Ask your home town
merchant.

Strevell-Paterson Hdw. Co.
Exclusive Jobbers

Salt Lake City, Utah.

"First of All—Reliability"



Our Annual Sale

Of Slightly Used, Second Hand and Rebuilt

Pianos and Player Pianos

49 Pianos of remarkable
excellence all guaran-
teed. Priced from... **\$85**

22 Rebuilt Pianolas and
Player Pianos all guar-
anteed. Priced from... **\$290**

This entire stock of seventy-one instruments rep-
resenting a value of more than \$21,000—has been re-
duced 25 to 50 per cent in price to induce quick and
certain clearance.

Never before have we offered a finer collection
either of pianos or players. Nor have ever before
felt justified in making such excellent exchange in-
struments at prices so exceedingly low.

The great prosperity and tremendous business of
the past few months has brought us an overwhelming
number of fine pianos and player pianos—taken in ex-
change for the Pianola, the remarkable Duo-Art Pianola
and other of our highest grade instruments which have
been sold, during this recent period, more extensively
than ever before in the history of our organization.

The high quality of the instrument sold is an in-
dication of the value of these taken in exchange. The
present instruments are not old worn out specimen
"traded in" because no longer useful—on the con-

trary every one is in the prime of its excellence. Every-
one would have continued to satisfy its previous owner
for many years had he not felt a desire and an ability
to purchase a finer and more expensive instrument.

Scores of the piano and players are new in all but
the technical sense of the word—some models in dis-
continued styles are new. Almost without exception
the entire number are like new. For our shops, work-
ing the capacity since December, have taken care of
every detail of refinishing and renewal of parts.

In fixing prices however, we have had to dis-
regard the unusual quality of goods and the fact
that we are dealing with a stock of new quality of
goods and the fact that we are dealing practically
with a stock of new instruments.

We cannot crowd our warerooms with the stock.
We cannot give up space in our storage houses to ac-
commodate it. Clearance must be immediate.

Our prices have been calculated to accomplish
this purpose within a 15 day period—the period of
your opportunity.

Mail us this information blank TODAY.

Your Own Terms—In Reason. Write Us Today

Consolidated Music Co.

ESTABLISHED 1862 13 19 E. FIRST SOUTH ST. ROYAL W. DAYNES
MANAGER

Our Fifty-Fourth Year—HOUSE OF STEINWAY

GENTLEMEN:—

Kindly send me a complete list of your slightly
used pianos and Player Pianos in your Annual Sale.

Name
Address
F.

SOLDERING.

By L. R. Humpherys

Knowing how to do a little soldering will be helpful to any farmer.

Equipment.—One pound half and half solder, a small block of salammoniac, a two pound soldering iron, small bottle of zinc chloride, resin,

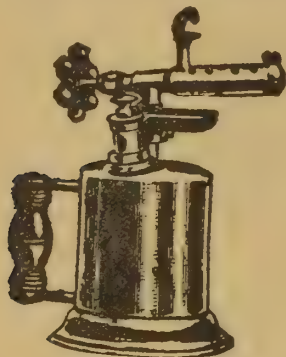
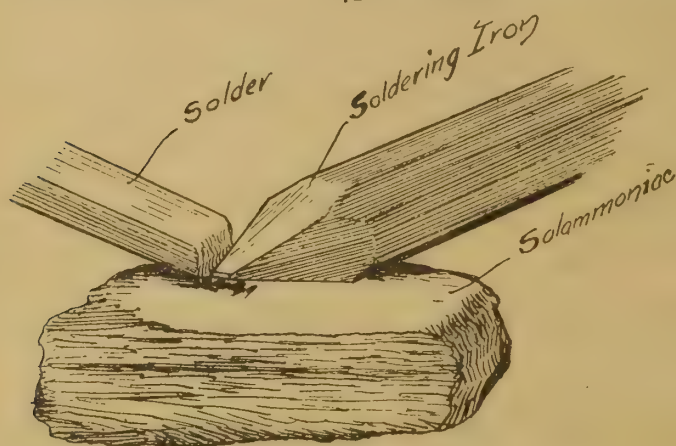


Fig 192

small blow torch or stove.

Instructions.—Soldering is a process by which two similar or dissimilar metals are joined together. This is accomplished by using a copper soldering iron, a cleansing agent and a solder usually made of equal parts of tin and lead, half-and-half. The point of the soldering iron should be first cleaned with a file or sand paper. It is then heated by a blow torch (Fig. 192) until the heat can be readily detected by holding it two or three inches from the cheek. A little practice makes one expert in determining this heat. The iron should then be rubbed on a block of salammoniac and at the same time placed in contact with a few bits of solder to tin the surface (Fig. 193). The salammoniac cleans the copper after which the solder immediately adheres, and the iron is ready for soldering work.

The surfaces to be soldered should first be cleaned thoroughly and given a thin coat of flux to remove any oxide or other foreign substance so that the solder will adhere and form good contact.



Tining with Salammoniac

Fig. 193

Tinning Compounds or Fluxes in Preparing the Metal Surfaces to Receive the Solder.

Metal to be soldered.	Flux to be used.
Tin sheeting.....	Zinc chloride or powdered resin
Copper.....	Resin
Galvanized Iron.....	Raw muriatic acid
Zinc.....	Resin or salammoniac

YOUR BODY NEEDS ENERGY

Such as is supplied by sugar which has 98 percent available food energy, more than other staples—that is why you have a craving for sweets, it is nature's demand and sugar is, per pound, one of the cheapest foods that can be secured, substitutes cost much more money.

DR. SKINEM QUICK

Wife—Isn't that your eye doctor?
Husband—I thought so until he sent me his bill. He's a skin specialist.—Harper's-Keekly.

Money to Loan On Farms

LIBERAL TERMS

If you need money for additional improvements to buy livestock or any other purpose let us help you.

Because of our long experience in the land business, we are prepared to give you the best service and portection.

Come and see us or write.

Kimball & Richards

"Land Merchants"

The firm that is known for the "liberal loan."

56 and 58 Main Street
Salt Lake City, Utah.

Sunday

and

Week-End Excursions

Via

Oregon Short Line



Travel More
At Slight Cost.

Half Fare
Sundays—
Slightly More
Saturdays to
Mondays.

EACH WEEK

BETWEEN LOCAL POINTS.

This innovation has been established for the purpose of permitting residents in local O. S. L. territory to visit back and forth Sundays and during week ends.

Saturdays to Mondays—

—To encourage baseball games and other sports between different towns.

—To make possible inexpensive outing and fishing trips, and generally to make it possible for our patrons to "get about."

Ask any Oregon Short Line agent for further details, or write,

D. S. Spencer, General Passenger Agent,
Salt Lake City, Utah.

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

Gem Herd of Improved Chester White Swine

This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions of the World's Fair held at Frisco this last year. Both Sire and Dam, is still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale at all times.

Address

GEO. H. LAWSHE

Falls City Idaho

BATES AND SONS

Provo, R. F. D. No. 1.

Breeders of S. O. White Leghorns and R. I. Red fowls and Airedale Dogs.

FOR SALE

Two registered Clydesdale mares, three and four years old. One team of draft horses; one driving mare. Call Andrew Knudsen, Supt. Utah County Infirmary, Provo, Utah.



Purebred Registered **HOLSTEIN CATTLE** Send for Free Illustrated Booklets. The Holstein-Friesian Association of America, Box 279, Brattleboro, Vt.

When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

BALLAMOAR FARMS

has for sale

AN ATTRACTIVE FOUNDATION HERD OF REGISTERED JERSEYS
9 Cows and a Bull

Rapid natural increase-causing overstock makes a sale necessary.

The Bull—GUENON'S CHAMPION BELMONT—is 11 months old, thrifty, has straight lines and good capacity, and will make a show animal. His dam has a 500 lb. R. of M. record. His sire is Belmont's Champion Lad, the sire of many prize winners. Two of his daughters have produced over 600 lbs. of butter in a year.

The cows are not culls but are richly bred and of good dairy type. They all have daily records of milk production.

Write for particulars or call and make your own selections.
Richmond CAINE LIVESTOCK COMPANY Utah

THIS YEAR IS THE YEAR TO BUY HOGS—

last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again.

The best time to buy is when pigs are young. Write today.

RICHARDS LIVESTOCK CO.

Virginia Idaho

Jesse S. Richards Mgr.
(The West's best Durecs)

UTAH HATCHED WHITE LEGHORN BABY CHICKS \$11.00 PER 100

Circulars, order-blanks, etc., upon request. Candee Colony Brooders carried in stock.

GLENWOOD EGG FARM

R. D. 3 Murray, Utah

AFTER THE HONEYMOON

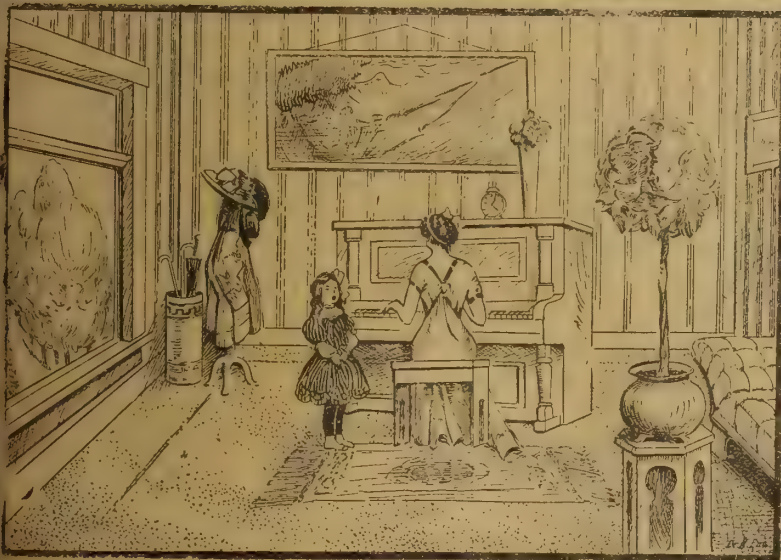
She—Before we were married you bought me much handsomer presents.
He—My general expenses were very

light then. You lived on your father and I lived on free lunch.—Boston Transcript.

ANOTHER BOARDER

Her Parent—You must understand, sir, that I want my daughter to have as good a home after marriage as before.

Her suitor—Well, you're not going to break up housekeeping, are you?
—Boston Transcript.



Other courses in Organ, Voice, Violin, Dramatic Art and Band Instruction for those who so elect.

All of the courses being taught by the Utah Conservatory of Music are compiled by the best talent that can be procured and are endorsed by the leading musicians of the West.

Utah Conservatory of Music

Templeton Building

Salt Lake City, Utah

WHAT WOULD SUIT YOU BETTER?

Have your children study music—they might become famous musicians some day. At least, the entertainment you will get from their efforts will more than repay you.

Prof. McClellan's Piano Course

For beginners—just the thing for your boy or girl—a course of easily understood lessons that any one can study.

This—by mail—course by Prof. McClellan is written for you—who are far away from the musical centers—and it combines his wonderful ability as a performer and his experience as an instructor into a simple method that makes its study easy.

Write for information on this TODAY. It costs you nothing. Send in the coupon below.

SEND IN THIS COUPON

UTAH CONSERVATORY OF MUSIC
Templeton Building, Salt Lake City, Utah.
Gentlemen.—Send free—information regarding the course checked. It is understood that I am not obligating myself in any way.

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Address.....

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Piano Organ Voice Violin Band Instruction Dramatic Art

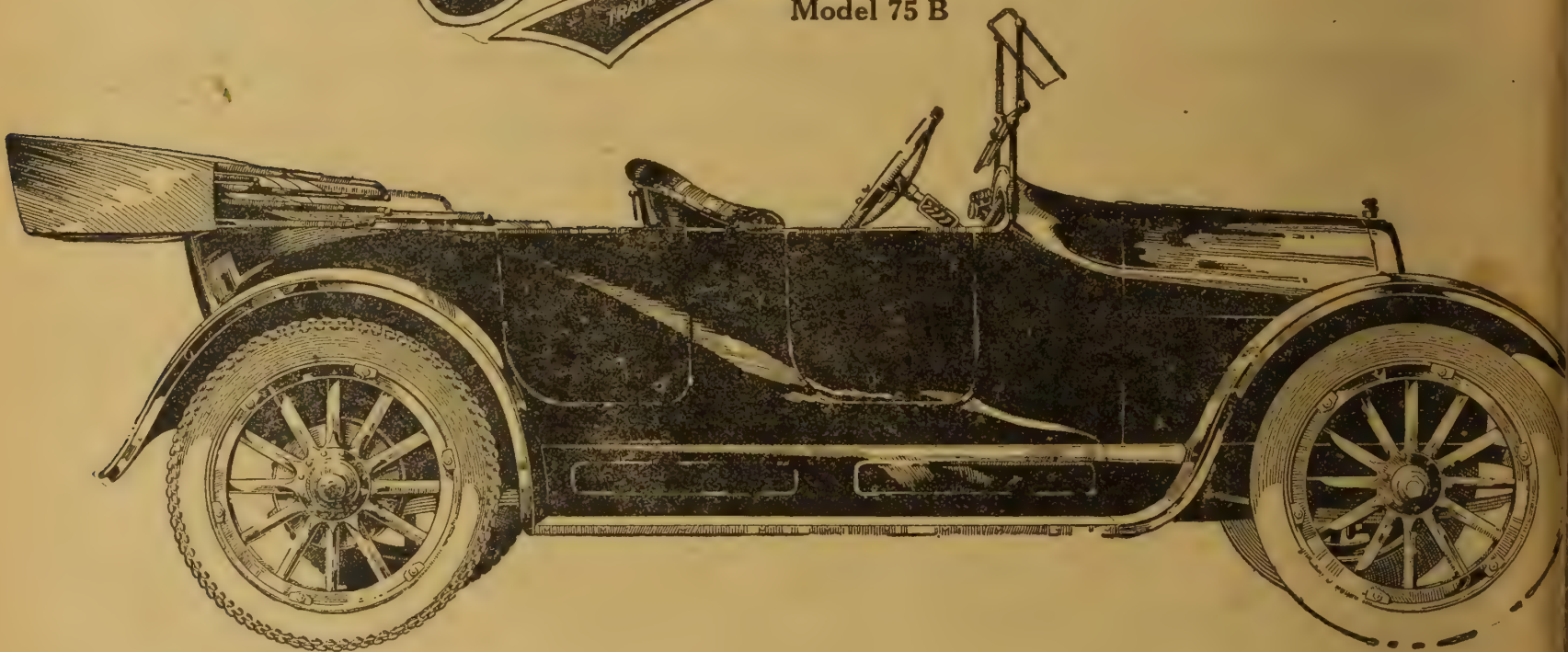
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Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 8

LEHI AND SALT LAKE CITY, UTAH

SEPTEMBER 23, 1916



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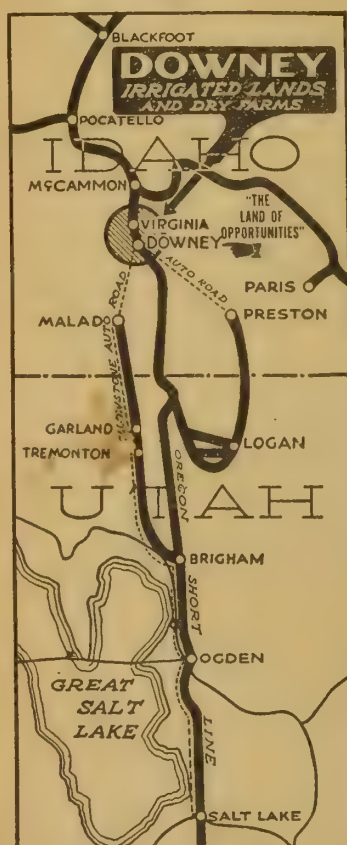
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Federal Land Bank Board

Three of the Federal Land Bank Board Commissioners, Mr. Herbert Quick, Mr. Grow Norris, and Mr. W. A. Smith, were in Salt Lake City last Wednesday and Thursday. They are making a tour of the United States to secure information as to where they shall locate the twelve federal land banks. The hearing before the Commissioners was held in the Federal Building.

Commissioner George W. Norris outlined the workings of the board and indicated to the farmers and others present the kind of information the board wanted. He went into detail about the value of the federal farm loan bill, showing how it will be of immense use to the farmer in obtaining money with which to develop his land. He declared that it would fill a long standing want, and as a result he predicted that farmers throughout the country would be able to improve their condition, and the condition of their farms through its enactment. The thought underlying the act, he said, was that the farmer needs capital on long time, with easy terms and low rates of interest. He told of the farm loan associations to be formed by the farmers desiring such loans, and explained in detail the methods of making the loans.

The loans will be limited, Mr. Norris said, the \$10,000, and in no case may a loan be made to exceed 50 per cent of the value of the land and 20 per cent of the value of the permanent improvements. Farmers will make application to the federal land bank of the district. An appraiser will be sent to value the land on which the mortgage is sought. For every \$1,000 borrowed the farmer must subscribe or \$50 worth of the stock in the association. The borrower will receive dividends, but when the loan is paid off the stock will be cancelled and the money returned in full.

Each of the 12 Federal Banks will start with a capital of \$750,000. All of the smaller organizations will do business with one of these Federal banks according to the district they are in.

Utah is working for one of these 12 banks and our claims were presented to the commissioners by a number of gentlemen who represented the different agricultural interests.

Some questions that every farmer will want to know were asked the board.

1. Will a bank be probably located in Salt Lake or Ogden?

The commissioners avoided every statement of any nature regarding the location of one of the twelve banks. The only answer obtainable was that every nook and corner of the United States would be served by one of these banks and that every farmer, no matter where he lived, would be able to

obtain the services of the officials of the bank.

2. When will money be available for the farmer?

Mr. Norris, for the commissioners, said he knew when the bank would not be in operation, and added "No bank will be in operation before January first next; probably not before February first." This is the only information which could be obtained on this point. Some time in November the necessary forms for the creation of the National Farm Association could be obtained from the secretary of the Federal Land Bank in Washington. However, these organizations were already being created in different parts of the United States. The procedure is very simple and it was suggested that no unnecessary expense be taken by the farmers for the organization of these associations.

3. Will there be plenty of money for the needs of all the farmers?

This question was answered by Mr. Quick for the commission. He said that prominent financiers throughout the United States had assured them that all the money necessary to supply all the needs of all the farmers of the United States would be available. Every bond was guaranteed by the joint and several guarantees of the twelve banks, amounting to a paid up capital of nine million dollars which was subscribed by the Federal government. They were also guaranteed by the National Farm Association. Each farmer must subscribe in stock in these associations a sum equal to five per cent of his loan, with a further responsibility of another five per cent in case of the failure of the loan of any one member of the association. These bonds were entirely free from all kinds of taxes, municipal, state and federal, including income taxes. Moreover, the bonds will be sold in low denominations, from twenty-five dollars and upwards, and would thus be available for the savings of the people.

The state of Massachusetts already proposed a law by which the state school fund would be loaned on second mortgages when the first mortgage was to a federal land bank. This showed the very high regard in which the bonds would be held. "It was not whether the bonds would have a ready market or not," said Mr. Norris, "but the question was how much less than five per cent would they sell." Hundreds of millions of money have already been offered to the Board if the bonds would pay five per cent, but whether or not the bond would sell at four per cent was the question.

The commissioners warned the farmers that they must not expect to have a high and inflated value placed upon their land, and that every precaution

(Continued on page 14)

Hogs and Sheep In Orchard

By Gordon G. Brown, Horticulturist, Hood River Experiment Station.

The question of the practicability of allowing hogs or sheep in the orchard for pasture is an old and mooted one, yet one on which additional light is being thrown each year. Data is being collected by the local Experiment Station which should enable the orchardist to judge for himself, approximately, the desirability or undesirability of such a plan under his own particular conditions. The fact that the 1915 report of this station is not yet in the hands of the growers causes the writer to feel that a few remarks on the subject will be in order here and at this particular time. Undoubtedly here, as elsewhere, many orchardists will throw up their hands in horror at the suggestion of allowing hogs, and especially sheep, the privilege of unrestricted roaming in the sacred and respected domains inhabited by the fruit tree. This view is especially taken because of the well-known tendency of the former to root up the ground badly, and of the latter to eat the bark of the trees. However, experimental data collected locally indicates that there is much merit in the plan of hog or sheep pasturing of the orchard.

What are some of the advantages of such a plan? What are some of the economic factors as well as scientific factors involved, because upon these points the desirability or undesirability of the whole scheme rests? In other words, increasing the output of marketable products from a given area of land and with a given capital without unduly increasing the expenses involved are the features to be emphasized. Under certain conditions which the writer will attempt to enumerate the pasturing plan appears feasible and desirable under Hood River Valley conditions. Briefly, the advantages of pasturing the orchard may be summed up in the following manner: (1) All of the land is fully utilized. In other words, it is being fully employed for the production of readily marketable crops. (2) Leguminous manurial crops are usually grown which, when eaten, are returned to the soil in a quickly available form. (3) Unless pastured too closely there is sufficient crop to turn under the green manure after the season is over or the crops begin to run out. (4) Where legumes are grown their nitrogen-fixing abilities are to be recognized and appreciated. (5) Where good animals and good pasture crops are provided, cheap and economical gains are made. (6) Green succulent pasture when thus utilized is worth more relatively than its market value after expensive labor has been used in putting it up in the form of hay. (8) More products are secured from a given area without greatly increasing

the cost. Hence increased net returns.

There are few conditions which usually obtain in the orchard itself that do not make such a plan feasible. Other factors such as housing, breeding, killing, marketing, etc., are not touched upon here. Of course in very young orchards where an abundance of succulent foliage and small limbs are directly exposed it is doubtful if it is advisable to turn other than very small shotes in for pasture. Also the whole subject must be viewed in the light of shade or cover crops and their manurial action, which is a big subject in itself and will not be discussed here. Usually where a cover or shade crop is sown primarily for green manurial purposes it is practical to pasture, as the manurial action is quickened. The subject of the availability of water for use both for pasture and fruit crop at the critical periods must also be viewed in the light of practical results. Just how such a plan will fit in with a permanent rotation in the orchard, labor distribution, etc., must also be considered.

The writer wishes to call attention to the observations made by the Hood River Experiment Station during the season of 1915 in the lower valley on sheep pasturing. Mr. R. W. Allen of the Umatilla Experiment Station was then in charge of the work. It will be well to observe that this is a class of animals which can be maintained without the use of grain and fattened for market solely on grain forage. Such being the case, it was thought desirable to note the gains made on the leguminous crops such as clover or alfalfa, and to study such other factors that indicate the desirability of undesirability of sheep pasturing in the orchard. It is important to note that owing to the shortage of sheep within reach of the district individuals were taken for the test that were considerably below normal in standard. The ewes wintered poorly and the lambs were small. On June 18, eight ewes and as many lambs were put on an acre of clover in a bearing apple orchard. At this time the ewes averaged 81 pounds each and the lambs 26 pounds each. At the end of twelve days the ewes showed an average of four and one-half pounds gain each, and the lambs fourteen and three-quarter pounds each. On August 9th, when the experiment terminated, the ewes had made a gain of three pounds each, while the lambs showed an average gain each of 63.7 pounds for the fifty-two-day period. This shows a daily gain of 1.2 pounds each during the entire period. Sixteen head of animals were kept for the first three weeks on one acre of clover. At the end of this time they were transferred

(Continued on page 7)

Can Lots of Fruit This Year

The United States Government is urging housewives everywhere to save the fruit crop. If every housewife will can lots of fruit, there will be little wasted and everybody will be more likely to have plenty of the good things of life.

The cost of living will be kept down if in the cellar of every home, is stored a good supply of canned fruit.

Start now. When you order your fruit, order a supply of—

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AN INCREASE OF
\$3,300,00, MORE THAN
DOUBLED IN FOUR
YEARS.

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SALT LAKE CITY



Live Stock

THE PURE BRED SIRE
F. W. Merrill.

Why will men who keep cows, whether for beef or for milk, persist in using a sire that has nothing whatever to recommend him? If some one will answer this question and tell us how to convert men to the idea of using pure blood he will save millions of dollars to the live stock interests of the nation.

A pure bred dairy bull has been bred for milk production for hundreds of years. Men have devoted their life time to the work of discovering the laws by which certain functions could be transmitted. As a result of their work we have cows producing 20,000, 25,000 and 30,000 pounds of milk in a year. One cow has produced 1205 pounds of butter fat in one year. I doubt if twelve average cows in Utah would do it. There is no better road to profitable dairying in Utah than the road of the pure bred bull—Utah is ready for a law which will prohibit the use of scrub bulls.

To show the influence of pure blood, some work conducted by C. Larsen, formerly of the Utah Agricultural College, but now of the South Dakota College is cited. He purchased just common South Dakota cows but secured a good pure bred dairy bull. One cow, Laura, was just common her average for five years, was only 152 pounds of butterfat. She had the best of food, the best care possible, a comfortable stable, she didn't have to go into the pasture even, her feed was served on a nice clean concrete platter, but she lacked the one fundamental thing a cow must have—namely—heredity, milking heredity. She had not been bred for milk production and hence could not convert her food into milk. Her first daughter sired by the pure bred bull produced during her first milking period 232 pounds of fat or 80 pounds more than her mother produced.

Daisy was another common cow. Her average production for five years was 140 pounds of butterfat. She was in good flesh, good to look at, easy to milk, but her ancestors were not noted for anything in particular. Her first daughter was also sired by the pure bred dairy bull and in her 1st milking period she produced 310 pounds of fat or 170 pounds more than her mother produced. The feed of both was the same, the care was the same, but 50 per cent of the blood of the daughter was real dairy blood, milk producing blood, milking heredity if you please. Her ancestry on the fathers side were developed along specific definite lines. Another cow, a hereford grade, selected because she looked like a dairy cow, produced 175 pounds on an average for five year. Her daughter produced during her first lactation period 310 pounds of butter fat or 135 pounds more than her mother produced. Example after example and experience after experience might be cited.

KILLING HOG LICE

By C. M. Evans, College of Texas.

A large number of hogs are not doing as well as they should these warm days for the reason that they are made miserable by innumerable vermin. The most common insect pests for hogs are lice and fleas. The lice not only cause a great deal of irritation, but they draw considerable blood and make the hog restless, so



The Milk Bill Tells

After you have been feeding "Sunripe" Stock Feed for a few days, you'll note a marked increase in the flow of milk from your cows.

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that it is impossible for them to do their very best.

Lice increase very rapidly in warm weather. Due to the fact that most of them increase on the body of the hog, it is fairly easy to get rid of them. The easiest way to do this, is simply to apply crude oil. This can be done with a brush or by tying old sacks around the posts in the hog lot and saturating them with crude oil. When the louse bites, the hog rubs that spot on the oiled post and the trouble is soon over.

A great many patented hog oilers are also on the market. Any of the coal tar stock dips may be used in a 2 per cent to 3 per cent solution and they carry with them the value of disinfection in addition to killing the insect pests. These dips cannot be put on of sufficient strength to kill the lice and nits, so a second or third dipping eight or ten days apart is necessary. With crude oil, however, the nits are killed with the first application.

There is some danger, however, in covering the entire body of the hog with crude oil on a hot day. If the hogs are large and fat it is better to brush half the hog one day, and the other half the next day. In the meantime it will rub in the mud and dirt sufficiently to relieve the danger.

Perhaps a better plan for ridding hogs of insect pests, is to build a concrete hog wallow. This should be made in the shade and should be made about 12 inches deep, four feet wide and long enough to accommodate as many hogs as necessary. The bottom

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should slope upward toward the sides so that the hogs will have no trouble in getting out. This wallow should be filled with water once or twice a

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Thomas A. Edison

week, and in this water may be placed some of the coal tar dips, or crude oil, to disinfect the water and kill the lice. This wallow has been called a "sanitary bath tub" for the hogs and, because it makes the hog comfortable, it will pay for itself several times over during the season.

ANOTHER DAIRYING METHOD

A story is told of an amusing experience a man had in a mountainous region of one of the south-western States, where its inhabitants are notoriously shiftless. Arriving at a dilapidated shanty at the noon hour, he inquired as to the prospects of getting dinner. The head of the family, who had been "resting" on a fallen tree in front of his dwelling, made reply to the effect that he "guessed ma'd hev suthin' onto the table putty soon."

With this encouragement, the traveler dismounted. To his chagrin, however, he soon discovered that the food set before him was such that he could not possibly make a meal. He made such excuses as he could for his lack of appetite, and finally be-thought himself of a kind of nourishment which he might venture to take and which was sure to be found in any locality. He asked for some milk.

"Don't have milk no more," said the head of the place. "The dawg's dead."

"The dog!" cried the stranger. "What on earth has the dog to do with it?"

"Well," explained the host medi-tatively, "them cows don't seem to know 'nough to come up an' be milked themselves. The dog he used to go for 'em and fetch 'em up."

"IT CAN BE DONE."

Somebody said that "it couldn't be done"—

But he, with a chuckle replied That "maybe it couldn't," but he would be one

Who wouldn't say so 'till he tried So he buckled right in, with a bit of a grin

On his face—if he worried he hid it; He started to sing as he tackled the thing That couldn't be done—and he did it!

Somebody scoffed "Oh, you'll never do that;

At least no one ever has done it;" But he took off his coat and he took off his hat, And the first thing we knew he'd begun it.

With a lift of his chin and a bit of a grin Without any doubting or "quit it" He started to sing as he tackled the thing That couldn't be done, and he did it.

There are thousands to tell you "it cannot be done." There are thousands to prophesy failure, There are thousands to point out, one by one

The dangers that wait to assail you. But you just buckle in with a bit of a grin, Then take off your coat and go to it— Just start in to sing as you tackle the thing That couldn't be done, and you'll do it!

—Edgar A. Guest.

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We can secure for you, without charge, a copy of Louden's dollar book of BARN PLANS; 112 pages of the most practical barn plans ever published. Treats every phase of modern barn construction. Shows plans for more than 75 barns, with estimated cost of each. Shall we order a copy for YOU?

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debts of honest bankrupts. Notice of complaint
must be sent us within thirty days from date of the
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Utah Farmer when writing the advertiser.

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Good farming demands good motive power
whether it is horses or gas machines.

Newly painted farm buildings, well kept yards
and good barns and outbuildings do much towards
making farm life attractive and desirable. More
interest in these matters would help Utah
farmers. There is no "best time" to do these
things, they should be attended to when needed if
possible.

Real co-operation begins when the farmer
himself desires it.

According to some figures just given out,
\$250,000,000 is the amount of the losses sustain-
ed by fire for the past twelve months in the
United States, the greater part of which might
have been saved if we had been more careful.

It will not be long until the fall rains will
begin. See that your yards and feed lots are
properly drained. If you have time, haul a load
or two of gravel and fill the low places. It
will be time well spent.

The people of Utah are converted to the neces-
sity of practical education, and many a boy and
girl is starting to school right now, while the
father and mother are taking on extra work in
order that their children may have the benefits

that come from a good education. I wonder if
the children really appreciate what the parents
are trying to do for them?

PLENTY OF PURE WATER

All animals require plenty of good, pure water.
This is especially true with the milking cow, as
water constitutes about three-fourths of the total
volume of milk, hence the necessity of a good,
pure water supply. This proposition is not given
the careful attention that it should be. We
know what a good drink of pure water means
to us, why not think of our dumb animals in the
same way.

SCARCITY OF PAPER

We are feeling very keenly the scarcity of
paper upon which to print the Utah Farmer. We
have been delayed in publishing the last two
issues a few days, and were compelled to use,
for part of our edition, much poorer paper than
we have used for a long time. We hope this
condition will only last for a short time. The
Government has taken hold of the situation and
some relief is expected from this source.

SAVE THE HAY

We cannot emphasize too strongly the neces-
sity of properly caring for your winter feed.
Prices may not be extremely high, but now is
the time to avoid feeding your hay by using the
pasture and other feeds that are usually wasted.
We were told the other day of a man, who for
several days has been making better than five
dollars a day, gleaning alfalfa seed from ditch
banks. This will emphasize our point to show
the amount of feed that is wasted.

Remember that every pound of hay you save
at this season of the year is a big help towards
winter feeding.

COST OF A "SCRUB SIRE"

If we could only learn the lesson that experi-
ence has taught others, who have made a care-
ful study of breeding live stock, we would use
only the pure-bred sire. When will farmers fully
realize the value of raising pure-bred sires, and
stick to one breed. If we would do this it would
revolutionize the live stock industry. Why do we
speak favorable of certain sections famous for this
or that kind of live stock? They have been using
pure-bred sires and one breed for years and re-
sults show the profits that come from this kind
of a policy. Consider the results that would fol-
low the use of pure-bred sires of high quality on
all our live-stock for the next ten years in this
state. We sure ought to do it.

FEDERAL LAND BANK BOARD

The visit of the Federal Land Bank Board has
partially answered a number of questions about
the new law. It appears to us that this law is
not going to solve all the financial difficulties of
the farmer. It is going to help in a great many
ways. It will be some time before the loans can
be obtained, and then only under the most care-
ful and thorough investigation will the loans be
made. The big problem lies with the farmers
themselves. They must join together and form
an association, so that they can work with the
federal banks. We shall try and supply our
readers with all the details and information as
it is given out. If anyone wants information
about this new law, don't be afraid to write us,
as we want to help you and above all we want
to see you get started right.

SHEEP VALUABLE ON SMALL FARM

The recent sale of rams at Salt Lake City helped
to emphasize the fact that sheep are bringing a
good high price. If possible every farmer
should have a small flock of sheep on his farm.
They cost little for feed, for they act as weed
scavengers, and grow into marketable products at
an early age. Small flocks upon every farm will
become more popular, for it is on such farms that
maximum results may be obtained. There are also
many waste places on farms which may be utilized
for sheep production. Another advantage of
sheep is that they require little labor. It is like
finding money, for the sheep have paid their way
in wool, fertilizer, and in the destruction of weeds.

SAVE THE GOOD CALVES

Some farmers are not able to purchase many
good cows at a time. There are few, if any, but
what can save the good calves. Good cows are
not always for sale, the other fellow wants to
keep them. There is a way, however, to build up
a good herd and that is by keeping the best
calves. How can one know the best calves? By
keeping records of the production of each individ-
ual cow in your herd and saving the heifer calves
from the larger producers. These calves being
from a good registered sire and from selected
cows, it will not take many years to build up a
first-class herd. You can only know your best
cows by continuous weighing and testing of the
milk, and keeping records of each individual.

THE STATE FAIR

This year the State Fair will be held September
30th to October 7th. Each year the Fair has
been growing bigger and more varied.

The fair should be essentially a farmers pro-
position. He should be able to learn at first hand
something about the best grains, vegetables, fruits,
live stock, and modern machinery. The public
should patronize the fairs and support those who
organize and bring together the many exhibits. It
should be a great educational institution where
the best of everything is brought together.

The exhibits this year will be varied and ex-
tensive. Our state fair is on a par with any of
them and should receive the patronage and sup-
port of our citizens. If we do not come with ex-
hibits we should at least see what the others are
showing.

Come on; Let's go to the State Fair.

BLINDING HEADLIGHTS

Again we want to say something about the
serious neglect of many motorists in proper
handling their headlights. Only this week we
saw the wrecked machines, where two autos had
come together on a turpike road because of the
glaring, blinding lights both were using.

We wonder that more accidents of this kind do
not happen, for the drivers are taking chances
when they meet an approaching car with head-
lights of such powerful strength.

Why don't they enforce the law—all kinds of
drivers are breaking it. Who is responsible for
neglect of doing this? If people will not respect
safety of others, teach them a lesson by having
them arrested.

Unless something is done and that right away
we will hear of many lives being taken because
so many will not obey the laws of the state and
show common courtesy by dimming their lights
when passing on the road.

HOGS AND SHEEP IN

THE ORCHARD

(Continued from page 3)

to an area of equal extent for one week. During this time the clover was eaten approximately half off. Owing to the fact that the fence became broken no further data was collected and the animals given a wide range.

The experiment indicates that during the early season before the lambs are feeding extensively eight ewes and as many lambs may be kept on two acres of clover pasture; later three acres will be required. These are results of preliminary work here and it is hoped more trials may be made this year and further observations. Owing to the fact that sheep can be purchased in the spring not far from Hood River Valley, it appears feasible for them to be bought at this time, kept in the orchard pasture during the summer and sold in the fall. Tests made with hogs were even more favorable from an economic standpoint. In one experiment near Oak Grove, thirteen hogs were kept on a three-acre patch of clover until such time as an adjoining tract of field peas became ripe enough to be fed off. Both crops were in an orchard near bearing age. The thirteen hogs placed in this experiment weighed on an average of 73.5 pounds. They were pastured on clover without supplementary feed for thirty-two days. During this time they made an individual average gain of 18.5 pounds, or .57 pounds per day. In the succeeding thirty-days they were fed rolled barley at the rate of one-half pound per hog daily. During this period the average gain was .44 pounds per hog. Owing to the fact that the animal's made smaller gains during this period than the former period the relation of greater succulency during the early season's growth to quick and economical gains is obvious. This is important. In the fifty-eight succeeding days the animals ran on clover and pastured off the peas in the adjoining field. During this period they made

an individual gain of .77 pounds per day. Thus the total gain per animal over a period of 127 days was 77.2 pounds, or .64 pounds per day. It is also worthy of note that 20 head of very small pigs also pastured with them during the entire time on clover. The exact amount of feed consumed, therefore, was not determined. However, the gain of .64 pounds daily per hog was very good considering the amount of grain fed, and indicates that there is profit in hogs in a normal season.

It is to be emphasized that if quick and economical gains are to be made pastures must be succulent. This means getting the animals on the pasture early while this condition still obtains. This condition may be maintained for a long period if sufficient moisture is available and the field or pasture is given alternate periods of rest. This may be conveniently arranged by having two or three inclosures. These fields are then used alternately, the hogs remaining in each about a week or ten days. In the case of clover or alfalfa the growth is allowed to become three or four inches high before the hogs are turned in to eat quickly. When the pasture consists of such crops as rape, kale and vetch, which will not stand such close grazing, the growth is permitted to reach a height of 8 to 10 inches before the animals are turned in. Changing the hogs from field to field gives the pasture a period of rest, during which the plants recuperate and grow rapidly. When the stock is returned to the field the forage is clean, tender, palatable and large quantities are consumed. Owing to the rapid growth made while at rest, a pasture that is subdivided and the areas grazed alternately is capable of carrying a much larger number of hogs per acre, other conditions being equal, than one that is continuously pastured. Hogs are inclined to root when the surface of the ground is wet or damp. For this reason the pasture, if under irrigation, is irrigated just after the hogs are changed from one pasture to another. This gives the surface of the ground time to dry before the forage is large enough to be grazed.

When conditions permit a grain crop may be desirable. This is especially true where there is a superabundance of moisture and the trees are making too much growth. Such a pasture is very desirable when the hogs are nearing the limit of growing period and the fattening period is begun. Such crops as wheat (soft club type), field peas and barley are splendid. These recommendations with reference to grain must be accepted cautiously, as conditions usually are not adapted in the orchard for crops of this kind. With legumes, however, the limitations are much less. An objection to the use of these animals usually is that they damage the trees and root up the ground. One method of avoiding this has already been suggested. Again, in such cases this is due to having a poor grade of animals, consequently poor feeders are having a poor crop on which to feed. In either case, and especially where combined chances for success are small, a high-grade animal must be used and succulent feed provided if results are to be secured. After the fruit crop is beginning to mature it is advisable to remove the animal's to another field, as it is at such times their tree-climbing and acrobatic tendencies receive the greatest stimulus. This is especially so with low-headed varieties such as Jonathan.

In closing the writer wishes to re-



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FOR PRESERVING

The Bee

uses only the finest and purest of wax for the preservation of her winter store of honey.

With equal prudence the sensible housewife uses Parowax when she "puts up" fruit. She knows it prevents mold and fermentation, makes the jars and jelly glasses air tight and preserves the original flavor of the fruit.

Parowax, the purest form of paraffine is guaranteed under the Pure Food and Drugs Act. It is sold by reliable dealers in one pound cartons.

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(A Colorado Corporation)

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TRUE ECONOMY

CHEAPNESS

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SCOWCROFT'S

NEVER-RIP Overalls and "MADERITE" Shirts

TRY THEM. They will give you more comfort and service for your money than any others you can buy.

UNION MADE

and they always give

Satisfaction

John Scowcroft & Sons
Co.
Ogden, Utah.

The Utah Work Clothes
Manufacturers.

mind that observations in the valley are still in the preliminary state, and that tests will have to be made over a wide field and under varying conditions before even general recommendations may be made.

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San Francisco

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and rail or steamer

\$40.00 TO SAN DIEGO
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**INSECTIDE & DISINFECTANT
FOR
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TRY, AND**

To be used for disinfecting barns, chicken coops, corrals, hog pens, out-houses, etc.

One Gallon Calko Dip Makes
From 50 to 100 gallons of disinfectant.

45c Quart
75c Half-gal.
\$1.25 Gal.

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Hog Powders**

IS A HOG CONDITIONER AND
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Don't feed worms—save your hogs
25 lb. sack (delivered
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50 lb. sack (delivered
freight) \$3.50

Callister-Korth Co.

McIntyre Bldg., Salt Lake City, Ut.

**THE PARCEL POST AND
ITS USES**

B. H. Hibbard, Ph.D. University of
Wisconsin.

The Parcel Post has been in operation now for a few years, and it has been both a disappointment and a success from the viewpoint of the farmer. The cause for disappointment was possibly due to the fact that too much was expected of it. It was not intended for a "cure-all" of the marketing problems. The idea from the agricultural standpoint was rather to furnish practical and actual means to bring into closer touch the farmer, with staple and more or less perishable farm products for sale, and the housewife, willing to pay a fair price for fresh vegetables, butter, eggs, poultry, and other articles of food. Taking the proposition as a whole, a good start has been made and there is every reason to believe it will eventually prove a decided benefit to the farmer and consumer as well.

One of the greatest of all advantages of the Parcel Post to the farmer people is that the rural carrier will both collect and deliver parcels. For this reason, if no other, the Parcel Post will always be sufficiently popular with country people to insure its continuance and development in bringing miscellaneous articles to the farm.

The produce that can advantageously be marked by this method is well worthy of consideration. To begin with, it should be worth several cents per pound. This means that all heavy, cheap produce, such as the majority of farmers market, must be ruled out. Hence, growers of grain, cotton, tobacco and potatoes will continue to rely on freight. The growers of vegetables will take a little more interest in the possibilities of direct marketing, but they will find their wares rather bulky and heavy in proportion to value a good deal of the time. There is another difficulty in vegetable marketing—the grower usually does not have a supply at all constant over any considerable part of the year. This is in itself a serious drawback.

What, then, are the articles fulfilling the exacting requirements of the Parcel Post and which at the same time are produced and prepared for market on the farms. Outstanding in importance are poultry, eggs and butter, and in a lesser degree fruits, meat and vegetables. For example, a farmer's wife takes great pains and pride in raising good poultry and wants a discriminating buyer.

A better opportunity is in the sale of eggs. Eggs are produced on the majority of farms, and, in all but severely cold weather, they may be marketed by Parcel Post to city people. There are plenty of people willing to pay good prices if only the produce be first class and the delivery regular. Eggs often sell for very low prices in summer, but even so, the consumer is not much gratified with the result since so many of them are likely to be below par by the time they reach the table. Here is the opportunity of the enterprising producer. Plenty of townspeople will pay a quarter a dozen gladly, instead of sixteen cents, if only they can get what they want—strictly first-class eggs. About three dozen make a good shipment for a private family. The cost of the container will be not to exceed two cents a dozen and can be used several times over with a little trouble and expense. The postage will be within the first zone, about two and a half cents a dozen.

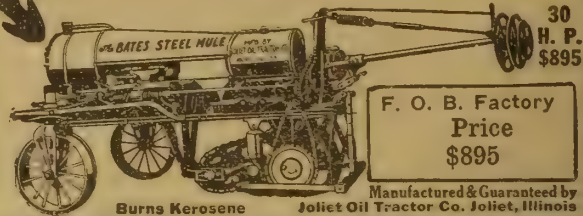
FREE EXHIBIT AT STATE FAIR GROUNDS

**A "One-Man" Tractor For Every
Farm Operation!**

The great success of the Bates Steel Mule among thousands of farmers is due to these definite facts:—It is the only real one-man machine built—every farmer can do more different jobs with it more days a year than with any other tractor—it works on any soil, wet or dry—and its price is right.

Bates Steel Mule

No new implements are needed. Your old tools will do the work cheaper, quicker and better when hitched to a Bates Steel Mule. Come in and let us tell you all about it.



30
H. P.
\$895

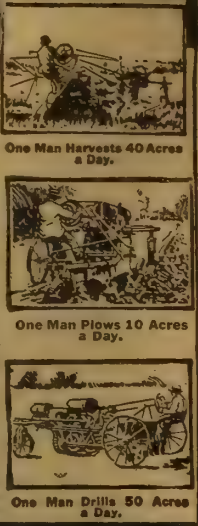
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Manufactured & Guaranteed by
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Machines on hand and ready for delivery

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SALT LAKE CITY



One Man Harvests 40 Acres a Day.

One Man Plows 10 Acres a Day.

One Man Drills 50 Acres a Day.

UTAH STATE FAIR
SALT LAKE CITY
SEPT. 30 - OCT. 7
8 FULL DAYS
Better and bigger than ever before
Sensational Amusement Attractions
WORLD-FAMOUS DIVING-GIRLS
REDUCED-RATES ON--
ALL RAILROADS
ADMISSION
ADULTS 25¢
CHILDREN 10¢

Thus five cents a dozen gets the eggs from farm to consumer, and five cents is left for the trouble. In this way 33 per cent can often be added to the income from such product. To the farmer who pays little attention

to egg production such a gain may of slight consequence; but to a farm woman who makes her spend money by selling eggs the difference is revolutionary.

Such instances as those just mentioned

tioned are, however, merely along the fringes of the possibilities of Parcel Post marketing. The way to get into it in earnest is to find a group of consumers who will form a neighborhood club and bargain for the regular delivery of a weekly hamper, or box, of produce. This will contain such fresh provisions as the farm affords and city people like—poultry and eggs are almost sure to figure in it, while butter, vegetables, meat, fruit and cottage cheese will occasionally fit in. The incentive back of the buyers is better things to eat, fresh, wholesome produce. They are not anxious to pay high prices, but they will pay and do it gladly, if only they can rely on the man at the other end of the line for promptness, quality, honesty. That is to say, the farmer must become a business man in many respects, must attend to his correspondence, must be on time with his orders, and for such there is great reward.

It must not be supposed that farmers are going to get greatly added prices for their goods without added care in grading and packing. To some this makes no appeal. They will not take the pains, and hence will not fit into the Parcel Post system. No worker should be discouraged because of this fact. It is the indifference of the multitude which makes the opportunities for the few. What an enterprising farmer wants is a chance to earn a better income and a better place in the community. What the consumer hopes is not for cheaper provisions by Parcel Post; not purchases which can be made with less trouble, but on the contrary, he hopes for better produce and positive delivery. These two sets of people are getting together, slowly it may be, but surely. There are opportunities for greatly enlarged incomes to a multitude of farmers, gardeners, and fruit growers. There are chances for much satisfaction to consumers through a more direct service. The Parcel Post furnishes the means of setting these two classes into business relations. It remains for the enterprising members of such producers and such consumers to learn how to use it.

HUMUS

Did you ever keep a piece of wood and fenced for ten or twenty years, never allowing fire to burn it over, and then clear it and put it in culti-

GREEN CONCRETE MIXERS

No matter how small the job all concrete should be thoroughly mixed. The old method of shoveling is tiresome from a physical standpoint and is very unsatisfactory for consistent mixing.

Our foot, steam or gasoline power mixers will solve the problem for you. Made in several sizes and endorsed by all who have used them. Made in Utah.

Write for information and bulletins. **GREEN MACHINERY AND MFG. CO.** American Building 338 So., Main St. First Building north of Post-Office Salt Lake City, Utah.



PIANOS

and Player Pianos—World's Best—Lowest Prices. Catalog FREE if you mention this paper

Daynes-Beebe Music Co. SALT LAKE



vation? Did you notice how deep and loose and mellow the soil was? How you could dig your toe several inches deep into it? How it made crops grow rank and green and enabled them to remain so during parching drouths? Such is humus—rotted, decaying vegetable matter, without which all farms and all farmers must be failures. Nature, unhindered, makes it by the ton; man, unhindered, has destroyed it faster than Nature has made it, as is evidenced by barren, gullied fields on every side. The remedy? There is only one, and that is back to Nature's ways. Burn nothing, grow winter and summer legumes to plow under every year, and your fields will come back to the fruitful fatness of olden days.

SHORT POTATO CROP

According to the September forecast of crops of the United States Department of Agriculture, the number of bushels in the potato crop in the United States will be 318,492,000 bushels or 45,779,000 less than the August estimate, which was 364,271,000. The average price per bushel for the United States, September 1, was \$1.09, ranging from \$1.35 in Wisconsin to ninety-five cents in Nebraska. Dr. George R. Hill, of the Utah Agricultural College in commenting upon this great decrease in the expected potato yield said, "It is advisable that Utah farmers know of this condition. Utah will have an excellent yield of fine potatoes this year and the farmers should reap reward for their careful labor. Many persons, aware of the expected drop in production, are trying to contract in advance for large quantities of potatoes, at a relatively low price. The farmer should know conditions and be in a position to protect their interests."

THE THINKER

Back of the beating hammer
By which the steel is wrought,
Back of the workshop's clamor,
The seeker may find the Thought,
The Thought that is ever master
Of iron and steam and steel;
That rises above disaster
And tramples it under heel!

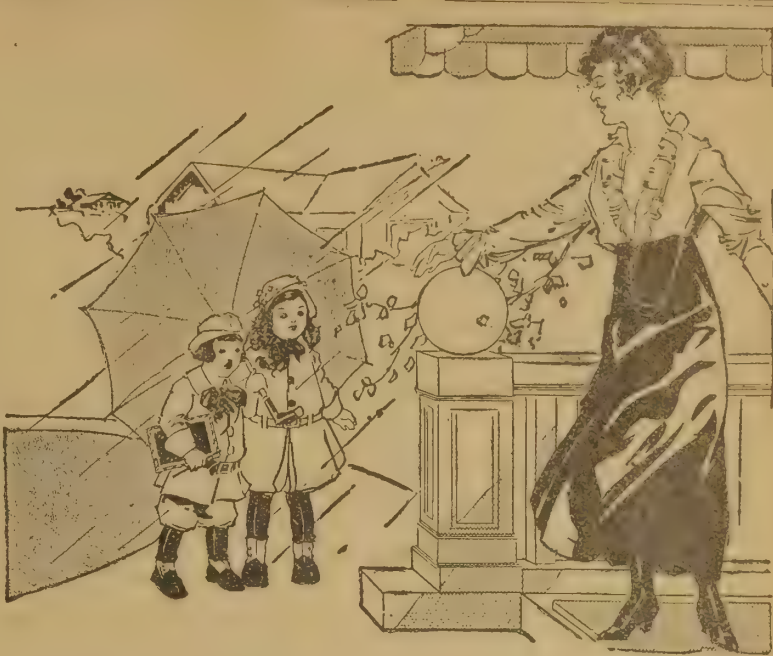
The drudge may fret and tinker
Or labor with dusty blows,
But back of him stands the Thinker,
The clear-eyed man who Knows;
For into each plow or saber
Each piece and part and whole,
Must go the Brains of Labor
Which gives the work a soul!

Back of the motor's humming,
Back of the belts that sing,
Back of the hammer's drumming,
Back of the cranes that swing,
There is the eye which scans them
Watching through stress and strain;
There is the Mind which plans them—
Back of the brawn the Brains.

Might of the roaring boiler,
Force of the engine's thrust,
Strength of the sweating toiler,
Greatly in these we trust,
But back of them stands the Schemer,
The thinker who drives things through.
Back of the Job—the Dreamer,
Who's making the dream come true!
—Berton Braley in American

STEP TO THE HEAD

The teacher of natural geography

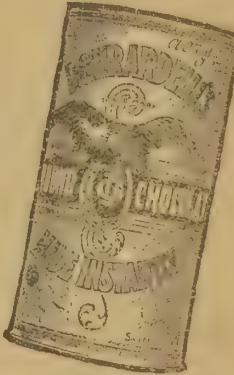


"Hurry, children—I've got a real treat for you."

Ghirardelli's
Ground Chocolate

is a fortifying food beverage for
all—from childhood to old age.

It comes PROTECTED—as all chocolate
should—in ½-lb., 1-lb., and 3-lb. hermetically sealed cans.



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for sale in South Eastern Idaho at a
Great Bargain
Fully Paid Up Water Right

in one of the best canals in the State. 160 acres all
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REASONABLE TERMS

Long time and low interest above cash payment.
Low price for limited time—must be snapped up
quick.

Miller & Viele

803-807 Kearns Building

Salt Lake City

directed all her pupils to write a definition of the word "geyser." Willie evolved this definition:

"A kaiser is a disturbance of the earth's surface."—New York Evening Sun.

HOME

FRUIT JUICES

"Fruit juices lend themselves to a large variety of uses such as ices, flavoring, ice cream, gelatine desserts, puddings, and sauces. There is no more refreshing and easily prepared drink for a hot day than an iced fruit juice.

"The juice may be extracted from the fruit by crushing the fruit in a fruit press or a cider mill or a small press after it is washed and sorted. The most economical method for the extraction of juice is to cook it out.

"If juicy fruits such as currants, raspberries, and grapes are being used, place the clean fruit in an enameled preserving kettle, add just enough water to prevent burning (1

cup to 4 or 5 quarts of fruit). Place where fruit will cook rather slowly, stirring occasionally with a wooden or enameled spoon. When the simmering point is reached, mash the fruit, then continue heating until the whole mass is cooked through. Care should be taken not to heat too long as the delicate flavor is destroyed. Pour the hot mass into a sufficiently large piece of coarse cloth, cheese cloth or flour sack, which has been wrung out of hot water. The opposite corners together and let juice drain into an earthenware or enameled dish. If a clear juice is desired, as for jelly, do not squeeze the bag. However, for general use squeeze the bag until all the juice is extracted. From less juicy fruits like apples, pears, and quinces, wash the fruit, discard any unsound portions, cut into small pieces (skins and seed included), cover with water, then proceed just as in the case of juicy fruits.

"Canning Fruit Juice.—Fill clean jars with juice. Adjust the rubbers and screw the tops on loosely. Lower upon rack into canner, cover with hot water and sterilize 15 minutes. Count from the time when the water in the canner begins to boil. Remove jars, screw lids tight and cool away from draught."

BUTTERMILK IMPORTANT

Buttermilk is not given the important place in our dietary that it deserves. In almost every dish where fresh milk is used, buttermilk might be substituted, and the cost would be much reduced.

When bought by the quart, buttermilk costs 5 cents, but as it will keep for several days, a gallon, at 15 cents, is not too much for the average family.

As a drink buttermilk is much more satisfying than fresh milk, and its acid makes it more refreshing. It should always be served cold.

Under the direction of a skillful physician many babies' lives have been saved by the prescription of a buttermilk diet. In cases where stomach trouble has been persistent, buttermilk has been used and known to work a permanent cure.

Breads and Cakes.

One of the best places to use it is in the making of quick breads and cakes. Cookies and gingerbread, too, are better when made with buttermilk. For sour buttermilk a teaspoon of soda should be used to a pint.

Try these hot cakes, in the evening add to two cups of buttermilk sufficient flour to make a thin batter, adding one teaspoon of salt. Let this stand over night.

In the morning, just before using, add one level teaspoon of soda, dissolved in a tablespoon of hot water. Beat one or two eggs very light, and add to the batter. Bake on a slightly greased griddle until a delicate brown. Serve with maple syrup.

Biscuits Are Excellent.

Buttermilk biscuits are unexcelled, for no other biscuits have their delightful flavor. Sift together four cups of flour, two teaspoons of baking powder and a teaspoon of salt. Chop in five level tablespoons of shortening, to two cups of buttermilk, add one level teaspoon of soda, mix well and add to the flour sufficient to make a rather soft biscuit dough. The dryness of the flour used will cause the amount of liquid necessary to vary.

Roll out the dough on a floured board, cut, dip in melted butter and place in pans. Let the biscuits stand a few minutes before baking in a quick oven.



"Just What You Want—

—tempting, tasty, tender Biscuits, Doughnuts, Cakes and other wholesome things to eat—so good that I could eat 'em all.

"That's because they're made with Calumet Baking Powder. I know Calumet is pure—I know it makes everything uniformly good—I know it never fails—I know it's the most economical to buy and to use.

"Mother uses Calumet every baked day and you ought to taste the good things we have at our house."

Received Highest Awards

New Cook Book Free
See Slip in
Pound Can



15 NEW BULBS, 10c.



1 Marvel Tulip, giant, fragrant, 1 Pink, 1 Scarlet, and 3 variety white Treasuries, 1 blue Babiana, 3 Double Rosebud, 2 Buttercup and 3 Grand Duchess Oxalis.

Also 10 Tulips, 1 each of 10 new classes for 10c., 15 Giant Crocus for 10c., or all 3 lots, 40 BULBS FOR 25 CENTS.

Our Catalogue of Hyacinths, Tulips, Narcissus, Lilies, Hardy Plants and rare winter-blooming plants free to all.

John Lewis Childs, Inc., Floral Park, N.Y.

STARS MAKE DOLLARS

If you're a man of energy and business ability, here's an opening worth consideration. There is a great demand for drilled water wells, and there's large sure profits to the man with a



STAR DRILLING MACHINE

Portable—Steam or Gasoline

Best by test. Low in price, high in practical worth. You can make it pay for itself and earn dividends all the time. Look into this! Sold on payment plan selected.

Our 140-page catalogue describes 21 different Star Drilling Machines. Write us and we'll mail you this book which will point the way to money making. Write today.

Star Drilling Machine Co.
642 Washington St.,
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For Greatest Satisfaction Use

DOUBLE SERVICE
Automobile Tires

Guaranteed 7,000 Miles Service

Absolutely Punctureproof

Double Service Tires are made double the thickness of the best standard make tires.

This 100% greater wearing surface naturally gives them a much more mileage and service. The average of 12 miles of tough makes these tires absolutely punctureproof.

These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—the air space and pressure being the same.

They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use in the U. S. government and European War service.

Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer:

PRICES

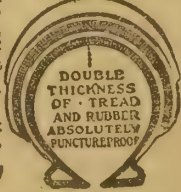
Tires	Tubes	Tires	Tubes
30x3 in.	\$ 8.00 \$2.30	36x4 in.	\$17.45 \$4.55
30x3 1/2 in.	10.85 3.10	36x4 1/2 in.	21.25 6.00
32x3 1/2 in.	12.75 3.20	38x4 1/2 in.	22.50 6.75
34x4 in.	15.75 4.20	38x4 3/4 in.	23.50 6.25
34x4 1/2 in.	16.70 4.35	38x5 in.	26.30 6.50

All other sizes not included in above list also furnished. Non-skids at 10% additional.

Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.

Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Descriptive folder upon request. Write for it.

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You demand all three in any heating system. They are always found in the PERFECTION SMOKELESS OIL HEATER.

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all that is needed. It's easy to carry, too.

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Sold at hardware, furniture and general stores. For best results use Conoco Safety Oil.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)

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PERFECTION
SMOKELESS OIL HEATERS

Salt Lake
City
Albuquerque
Butte



**TO PEEL FRUITS
AND VEGETABLES**

In the annals of cookery there are many laborious and some reprehensible methods recommended for the skinning of fruits and vegetables, yet a large number of the skins of these

foods will yield to a little scalding or blanching.

Even the skin of the potato will rub off after less than ten minutes of scalding, and five minutes is all that is needed for carrots and parsnips, after which the boiling water is poured off, cold dashed over them, and drained off. The skins should be removed at once for they seem to dry on again. This is the method used when these vegetables are to be canned.

To peel grapes, tomatoes, peaches, apricots, plums, etc., all that is necessary is to pour boiling water over them and let them stand for a few minutes. The skins of the nuts that can be blanched will usually yield to the boiling water simply, but pistachios need five minutes of boiling.

Preparing Small Carrots.

Bunches of rather tiny carrots are becoming more and more common in the market, and the only really profitable way to use them is to cook them whole. It takes time to scrape them, and besides it is hard to get them handsome and smooth when this is done. The best thing to do is to throw them into boiling water, boil for five minutes, pour this off and cold water on, and then rub off the skins at once, leaving them smooth and shining. Then put them to cook in only so much cold water as will boil away in the half hour required to cook them tender. If a tablespoon of butter and sugar be added to each two bunches, no dressing will be required. Little piles of these make a handsome garnish for a roast and are almost needed for an all-vegetarian dish of handsome mixture sorts.

**TOUGHNESS IN MEAT
EASILY OVERCOME**

Cheap cuts of meat are easily digested and palatable as well as economical, if they are prepared in such a way that their toughness and lack of flavor is overcome. Prolonged cooking at a low temperature will soften the connective tissues or chopping the tough cuts will break the muscle fiber and this also will make it more tender and more easily digested. The natural flavor of meat may be retained by careful cooking. Other flavors may be added by the use of vegetables such as onions, carrots, green peppers, turnips, or by seasoning with condiments, such as sage, lemon rind, vinegar, celery seed, pepper sauce, pickles, cloves, currant jelly, or some good commercial meat sauce.

GRAPE KETCHUP

The housewife whose family is fond of grapes will find that the following recipe for grape ketchup will please:

- 3 qts. grapes, stemmed.
- 2 lbs. brown sugar.
- 2 cups vinegar.
- 1 teaspoon cayenne.
- 2 tablespoons ground cinnamon.
- 2 tablespoons ground cloves.
- 2 tablespoons allspice.
- 1 tablespoon salt.

Cook grapes, run through colander to remove seeds, add sugar, vinegar and spices. Boil until it thickens and seal.

GO SEE THE WONDERFUL PRODUCTS OF MILLARD COUNTY County Fair at Fillmore, Utah, via Oasis, Utah, September 28, 29, and 30. Excursion tickets on sale from all Utah stations, September 27, and 28th. Tickets good returning October 5th via Salt Lake Route. adv.

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FARM POWDER**



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Farm Explosive**

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BIG BOOK FREE

As pioneers and leaders in developing farming with explosives our booklet gives the latest, most reliable and best illustrated instructions. Write for **HAND BOOK OF EXPLOSIVES No. 588F.**

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World's largest makers of farm explosives
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Within short distance of two good mining camps. Good market for all garden truck.

On railroad giving excellent facilities.

Prior water right at \$1.00 per acre if used.

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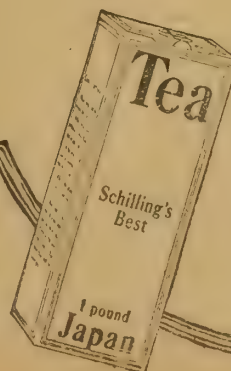
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Salt Lake City, Utah



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All or part of 180 acres in the Bear River valley at \$30 per acre. This land is under the canal. Can be dry farmed for five years, at the end of which time water will be sold for it at \$50 per acre.

113 acres between Garland and Tremonton. All irrigated from the Bear River canal. This land can be had on excellent terms at \$120 per acre.

160 acres on main County road. 60 acres in alfalfa. 40 acres sugar beets, family orchard. Balance plow land. 5-room frame house, barn, granary and other outbuildings. Abundance of water for the above land. This place can be divided into 40 or 80-acre farms at \$115 per acre, on easy terms.

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"Land Merchants."
56-58 Main Street,
Salt Lake City, Utah.

Phone Wasatch 963.

THE MELON AND

ITS BY-PRODUCTS

To serve melons it is well to place them on ice if possible for an hour or two before serving, but they may be cooled in a cellar, or even hung into a deep cold well. Many like salt with watermelon or even with a muskmelon or cantaloupe. A small melon may be cut in halves and bits of chipped ice placed in the heart of it, just before serving. Even a large melon may have a piece of ice placed in the center for a little while before serving. This makes it very crisp and delicious.

Some think that watermelons need to be cut before ripe, and be buried in the earth for a season of ripening, and these are good, but those ripened on the vine are certainly very good.

The usual idea is that melons can be used in but one way, but this is not wholly true. Muskmelons or cantaloupes may be sliced and served with sugar and cream as a sauce for supper, and they are fine, this way, quite as good as bananas, and very appetizing.

Melon Short Cake.

Moreover these melons may be used to make a short cake, by cutting small pieces, covering with sugar and using the juice of half a lemon and sliced pulp of an orange. Spread the mixture on any approved shortcake. This may be made like a good biscuit dough; a pint of flour will make a cake large enough to serve four persons; and three cups of flour will make a cake large enough for six generous helpings. Use about a half cup of lard and three heaping teaspoonfuls of baking powder, a little salt, and wet up with half as much milk or water as you had flour. This will make it soft, and it may need a good sprinkling of flour in order to roll it out, but the softer the better. Bake, and split when done, butter well, and fill with the prepared fruit and melon mixture. Put the top crust on the fruit, and cover the top, which will be without crust, with butter and the mixture; serve with cream.

Canned Melon.

One woman I know cans muskmelons or cantaloupes. She takes the pulp and cuts it into dice, makes a syrup and puts the melon in and heats it, then she puts it in cans and uses as she wants it. It is quite unique as a sauce. To keep for a short time the melon may be cut in pieces and put in a can, with water poured to flush the can full, the same as pie plant is sometimes put up. The top of the can and the rubber are heated to make it seal, and the can is put away in the dark. I cannot recommend this to keep for any great length of time, but it may lengthen the melon season a little, and the contents of the jar may be used, pouring off the water, and covering the melon with sugar and cream.

Pickled Rinds.

It is quite a common thing to pickle watermelon rinds, but few use the muskmelon rinds. Last year we had a great many small melons which did not ripen. Those were divided amongst the neighbors who put them up in various ways. One way was to fix the same as for watermelon rinds, and it is said they make a better pickle. They may be put up either sweet or as a sour pickle. Oh they may be diced and put up like citron, with lemon and raisins.

Melon Mangoes.

Small muskmelons make ideal mangoes, and they are prepared by cut-



Hosiery That Stands The Children's Romping

Don't get discouraged when the children come racing in with dollar-sized holes in their stockings. Let them wear Durable Durham Hosiery and you will not live in terror of the holes. It is made strongest where the wear is hardest. The knees are triple strength and the heels, soles and toes are heavily reinforced. Mothers, everywhere, are doing less darning, because

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ting a small opening in the melon, and scraping out the insides thoroughly with a spoon or something. When prepared, place in a brine, and let stand for twenty-four hours, remove and drain thoroughly, steam for an hour, or at least long enough to get them well heated through. Then fill with a chopped pickle made of green peppers, tomatoes and onions. Cover with a weak vinegar, and after two days drain again, and make a strong spiced vinegar, heat to boiling point, pack the mangoes in a jar. The pieces which were cut out may be inserted and held in place by a skewer or even be tied in. Cover with the boiling vinegar, and let stand a week, drain and re-heat the vinegar, and again pour over the mangoes. I have had such mangoes keep two years, and they are very good.

Mock Citron.

If you like citron at all try using some of your small melons in its place, unless you have plenty of the citron. Fix some with lemon and raisins and try some with oranges. The melon is cooked in deep water till tender, and it is then cooked in more water until that bitter taste is eliminated; then it is combined with the prepared citron or melon, and put into a heavy syrup to cook till clear. Use the pulp of the orange when the mixture is put into the syrup.

Salt rubbed on egg stains on silver, or on black spots on dishes will remove them; salt placed over fresh claret stains on table linen will help to fade them.

Ice cubes served in individual molds, such as hearts, spoons, shells, true-lovers' knot, and like shapes, are pleasing to the eye, and such molds are to be had at the house-furnishings counters.

To remove ink stains from delicate linen fabrics, wet the spots in milk, then cover with salt, doing this be-

fore the garment has been wet for the wash. Another way is to dip the fresh stains in melted tallow, then wash as usual.

Where green corn pudding is liked, the addition of a little finely chopped green pepper pods, a few drops of onion juice, and a morsel of garlic give a distinctive Mexican taste to the dish, which will be much liked by some.

Ice cream may be colored with the vegetable green to be had at the drug stores, and molded in the form of bunches of grapes. If a few natural leaves can be found nice enough for use, serve the cream on these laid on a pretty glass dish.

GROWING POPULARITY OF HOLLYHOCKS

The growing fondness for hollyhocks can be partly explained by the formal and semi-formal style of garden that is now so popular.

"There is a wide diversity of opinion as to the best soil for hollyhocks. I have before me as I write the books of two 'authorities,' one of which says they should have a very rich soil, the other one saying they should have a dry and rather poor soil. My own opinion runs with the former authority; and I would only insist that it is more important to have the soil in the very perfection of physical condition than to have it rich in plant food. Good physical condition is partly the result of original composition and more the result of constant deep and thorough cultivation.

"In colors and forms the hollyhock is just as versatile as any of our best garden plants. Indeed, the range of colors is unusually wide, and the colors are all good.

"Aside from the point of color the form of the blossoms cuts the largest figure in hollyhocks. There are several types of double, semi-double, ruffled and fringed, besides the good honest single sorts. The very full double blossoms have always been popular, and quite deservedly so, but it may be fairly questioned whether the single flowers are not more effective in the prim old-fashioned style of garden to which the hollyhock is naturally suited." — Woman's Home Companion.

WHAT THE FARM SHOULD HAVE

A house which is adequate to the needs of the family and equal to any house in the community as a home, if not a house.

A barn that looks pretty good to the neighbors who pass by and feels pretty good to the stock that pass into it.

A few shade trees that hide some of the hot sun and hard winds, but none of the beauty of the place.

A cow that is worth her weight in butter and is not for sale.

A bunch of hens which do a lot of cackling and laying and the rest of the time are scratching for themselves and their owner.

A dog that will bark at strangers and sometimes at the moon, and will wag his tail when the neighbor comes up the walk.

A well that never runs dry, a family horse that never runs shy, and a bill at the grocer's which is never allowed to run high.

A garden which has something growing in it all the year 'round besides weeds.

A mail box that is seldom empty when the carrier comes 'round and is never empty when he leaves.

An orchard that will bear all kinds

WON HIGHEST AWARD

PANAMA-PACIFIC INTERNATIONAL EXPOSITION SAN FRANCISCO 1915

Get the Grain in Right



Empire Jr., Hoosier, and Kentucky Grain Drills

BEGIN this season to put in your grain with an **Empire Jr., Hoosier, or Kentucky drill.** It's the best and safest way to plant.

No matter whether the ground is hard or soft, gravel or clay, smooth or rough, level or hilly, there is an **Empire Jr., Hoosier, or Kentucky drill** that will plant your seed as it should be planted.

The value of drilling in the seed shows at market time. The grain grades higher and brings a better price. There is more of it, and that again gives you more money. An **Empire Jr., Hoosier, or Kentucky drill** has a remarkable effect on net profits.

For any soil and for any seed, from alfalfa and grass seed up to the size of beans, sown with or without fertilizer, buy and use an **Empire Jr., Hoosier, or Kentucky drill.** Do that, and you can't go wrong.

Sold by IHC local dealers everywhere, who will give you any information you need to buy the best drill for your work, or, write us for catalogs.

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5 acres unimproved on Green River and San Rafael 18 miles below town. Elevation 3980, part can be irrigated by gravity, plenty of water and timber and a range where stock graze winter and summer. Fine Soda spring on land. Ideal for home and ranch.

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FOR SALE—Prize winner, pronounced by judge at Provo Stock show the best by far Jersey bull born under 1 year. Age now 7 months. Inquire of owner, J. W. Boswell, 33 East Center street. Phone 341-R.

FARM FOR SALE—125 acre farm, 100 acres good beet land with 116 shares in Bear River Canal, all fenced with hog tight wire into seven fields; eleven room home house equipped with electric lights and water, good barn and sheds. Located 1/2 mile west of Grinne on gravel highway. Terms. This land will be all tiled by Nov. 1st. Enquire of W. T. Davis, State Bank of Brigham City or W. L. Boswell on the premises

University of Utah

Salt Lake City, Utah

Instruction begins Monday, September 18th.

Registration of students and entrance examinations on Thursday, Friday, Saturday, September 14th, 15th and 16th.

Registration fee during the three registration days—September 14th, 15th and 16th—\$10.00; after that \$12.00.

Proper buildings with spacious laboratories replete with modern equipment, and a Faculty composed of graduates from the leading universities of the land, are AT YOUR SERVICE.

Courses are offered that prepare for almost any vocation.

The credits of the University of Utah are accepted in full by the best universities in the United States.

Full information sent upon request.

UNIVERSITY OF UTAH, Salt Lake City, Utah.

of fruit and any kind of inspection.

A father whose sons will lend a helping hand in solving all of the problems of making the farm pay.

A mother whose daughters will relieve her of the hard work in the house, and will see that she takes a vacation once in a while.

A daughter whose mother sees her in the kitchen oftener than in the parlor.

A growing boy of whom it may be said that he is putting the arm into his dad's farm.

Some good farm tools to do with, and some good farm rules to go by.

Some cats and very few mice.

Some flowers; yea, many of them.—Oklahoma Farmer-Stockman.

OF THE SAME CLASS

"They say," remarked the spinster boarder, "that the woman who hesitates is lost."

"Lost is not the proper word for it," growled the fussy old bachelor at the pedal extremity of the table. "She's extinct."—Indianapolis Star.

FEDERAL LAND BANK BOARD

(Continued from page 3)

must be taken to guard the security of the loan, but other than this caution which must be taken, that every farmer would be able to obtain the money to which he was entitled.

4. Upon what terms may this money be obtained?

No loan would be made, it was explained by the commissioners, for less than five years, for more than six per cent interest, for less than one hundred dollars, nor more than ten thousand dollars. No one but a farmer who is farming his land can obtain a loan. Different options for payment after five years would be made, but at least one per cent of the original loan together with interest on the original amount of the loan would be required each year. If, therefore, a loan was at six per cent per annum, at least seven per cent per annum would be required each year after the fifth year and this would pay the loan in about thirty-three years, both principal and interest. Should the farmer elect to pay more than seven per cent each year the principal and interest would be paid in a correspondingly shorter time. To repeat, any farmer who will give the proper security may obtain a loan and pay only seven per cent each year on the principal and this will pay both principal and interest. The money thus obtained must be used to either pay off a mortgage debt or improve the farm or purchase livestock for the farm. A farm may be re-appraised after the money is spent on the farm or after it has enhanced for any other reason in value and a larger amount of money be obtained, but not more than fifty per cent of its value, plus twenty per cent of the insured value of its permanent improvements can be obtained.

Mr. Quick said they were building highline canals and that every farmer would be able to get under the system. To the individual farmer it would make little difference as to where one of the Federal Banks was located. The system will be so arranged that every one will be able to secure any loan he is justly entitled to according to the new law.

LARGE SEED A FACTOR IN PLANT PRODUCTION

M. B. Cummings.

Good seed, better seed, and the best seed are terms of prime importance

in plant production. Good seed is that which is true to name, well preserved, viable and free of foreign seed and insect ravages. Better seed than that which is merely good, may sometimes be procured by taking advantage of specially favorable seed years, and occasionally by the payment of higher prices for seed that is carefully screened. The best seed and the requirements therefor have not been fully determined. That parentage is one of the factors that make for the best seed is a popular notion that is being supported by recent experimentation. Plant breeders are finding evidence of the value of parentage selection. It will soon be possible to formulate a law declaring that the best seed can be obtained by selecting it from plants which exhibit the greatest number of desirable characters. The size of the seed is also a factor that determines its value; and the tests herein reviewed furnish evidence tending to show that, other things being equal, the largest seed are the best and the smallest seed the poorest.

THE LIFE OF PEACE

William Morris.

"Sweet friend," he said, "what thou sayest is better than well; for time shall be, if we come alive out of this pass of battle and bitter strife, when I shall lead thee into Burgdale to dwell there. And thou wottest of our people that there is little strife and grudging amongst them, and that they are merry, and fair to look on, both men and women; and no man there lacketh what the earth may give us, and it is a saying amongst us that there may a man have that which he desireth save the sun and moon in his hands to play with; and of this gladness, which is made up of many little matters, what story may be told: Yet amongst it I shall live and thou with me; and ill indeed it were if it wearied thee and thou wert ever longing for some day of victorious strife, and to behold me coming back from a battle high-raised on the shields of men and crowned with bay; if thine ears must ever be tickled with the talk of men and their songs concerning my warrior deeds. For thus it shall not be. When I drive the herds it shall be at the neighbors' bidding whereso they will; not necks of men shall I smite, but the stalks of the tall wheat, and the boles of the timber-trees which the wood reeve hath marked for felling; the stils of the plough rather than the hilts of the sword shall harden my hands; my shafts shall be for the deer, and my spears for the wood-boar, till war and sorrow fall upon us, and I fight for the ceasing of war and trouble. And though I be called a chief and of the blood of chiefs, yet shall I not be masterful to the good-moment of the Dale, but rather to my hound; for my chieftainship shall be that I shall be well beloved and trusted, and that no man shall grudge against me. Canst thou learn to love such a life, which to me seemeth lovely?"

TWO BIG EVENTS

Utah State Fair and Fall Conference
L. D. S. Salt Lake City, Sept. 30th to
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Low excursion rates via Salt Lake Route on sale Nephi and Tintic, and North September 30th to October 8th, inc. Good returning October 12th. All other points on sale September 29th to October 7th, inc. Good returning until October 15th. Extra sleepers and day coaches for this occasion.

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This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

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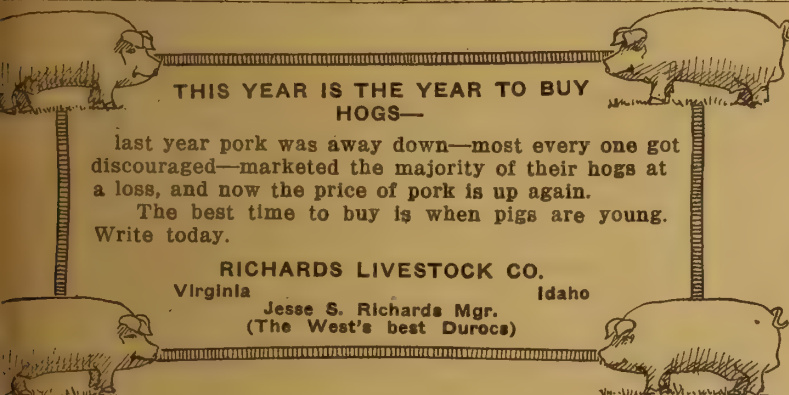
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last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again. The best time to buy is when pigs are young. Write today.

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has for sale

AN ATTRACTIVE FOUNDATION HERD OF REGISTERED JERSEYS
9 Cows and a Bull

Rapid natural increase causing overstock makes a sale necessary.

The Bull—GUENON'S CHAMPION BELMONT—is 11 months old, thrifty, has straight lines and good capacity, and will make a show animal. His dam has a 500 lb. R. of M. record. His sire is Belmont's Champion Lad, the sire of many prize winners. Two of his daughters have produced over 600 lbs. of butter in a year.

The cows are not culls but are richly bred and of good dairy type. They all have daily records of milk production.

Write for particulars or call and make your own selections.
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the HOTEL that's BEST all the WEST."

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Gentlemen.—Send free—information regarding the course checked. It is understood that I am not obligating myself in any way.

Name.....

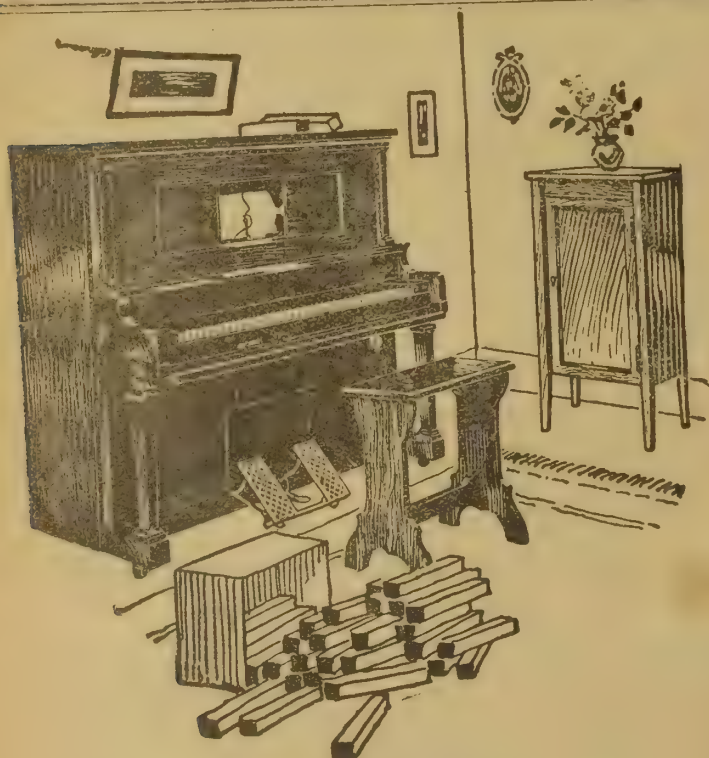
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DELIVERED TO YOU FOR \$10
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Balance in easy monthly payments. Price of Outfit \$460.

The Aeolian Player-Piano is entirely above the class of other player
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For price is not the first consideration in this instrument. It is the
 highly perfected and finished product of the largest manufacturers of musical
 instruments in the world—the concern known everywhere as the leader in fine
 player construction—the Aeolian Company. So quality is the first require-
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Its wonderful pneumatic system, because of many patented and exclusive features,
 is unequalled in responsiveness, musical capability and ease of operation. A remark-
 able perfection is evident in every part that is a factor in securing musical excellence
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 all of the world's finest players.

The piano quality of the Aeolian Player is also very superior. The tone is rich,
 smooth and big in volume. The action is quick and well-balanced—delightfully
 satisfactory to the person who plays by hand. The tone experts who have made the
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OCT 1 1916

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 9

LEHI AND SALT LAKE CITY, UTAH

SEPTEMBER 30, 1916



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"If you're wise you'll take your stand On DOWNEY Irrigated Land"

where you will enjoy prosperity on your own farm.

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Location

On the main line of the Oregon Short Line, 95 miles north of Ogden and 40 miles south of Pocatello.

Climate

The climate is similar to that of Cache Valley, which immediately adjoins Marsh Valley on the south. There are no extremes of temperature.

Soil

The soil is a rich sandy loam, which in its natural state is covered with a heavy growth of black sage. This type of soil has been proven to be equal of any in the world for fertility.

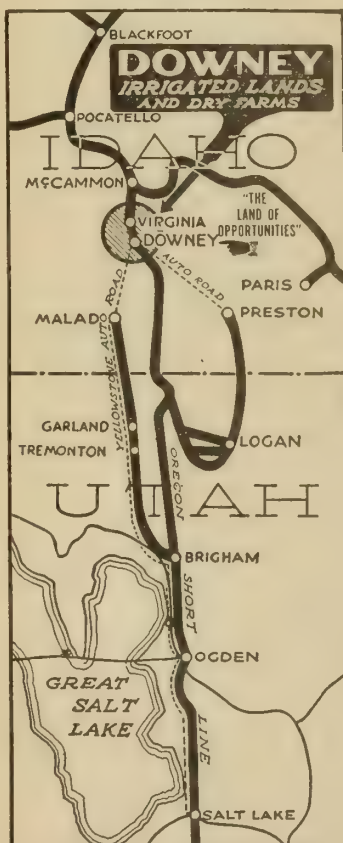
Markets

Stock, grain and produce are shipped to Utah, Montana and Pacific Coast points. The local demand is greater than the supply. There are no better markets any place in the country than those tributary to Downey.

This Man Knows

J. A. Fitts, who has successfully farmed near Downey for six years, says, "Any man who will work on his farm in this valley is bound to succeed. There is no better land, no better railroad, no better water, both for domestic use and for irrigating, in the country. The soil is rich and the climate almost ideal. Potatoes will bring over \$100 per acre and from 40 to 50 bushels of wheat to the acre is a common crop. Last year I raised 35 car loads of fine potatoes on 100 acres of virgin land, or about 250 bushels per acre. There is no better farming country anywhere in America than the irrigated lands near Downey."

Study this Map



Irrigating Water

An abundance of irrigating water is furnished through the big canal from the fine modern reservoir on the Portneuf river. The main canal is 30 feet wide, 4½ feet deep and 26 miles long.

Culinary Water

The culinary water, found at a depth of 10 to 35 feet from the surface, is of a very superior quality and in great abundance.

Why You Should Buy Now

A sugar factory will soon be built near Downey. By getting in TODAY you will be buying at "ground floor" prices. The Downey and Marsh Valley country is growing rapidly. Prices will never be so low again.

Come in, write or telephone and arrange to see for yourself. Get our free illustrated Downey folder. It is yours for the asking.

\$60 to \$100 An Acre

including a full water supply from the big Canal system, is the average price of the best irrigated farming lands. Most of the farms are in 40-acre units. In the main they are fully developed farms with alfalfa, grain and garden products now growing.

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The first payment on a 40-acre farm is from \$200 up. The balance can be paid in 10 equal yearly payments. Interest at only 6 per cent on the unpaid balance. Dry farms \$35 to \$65 an acre.

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I am interested in buying
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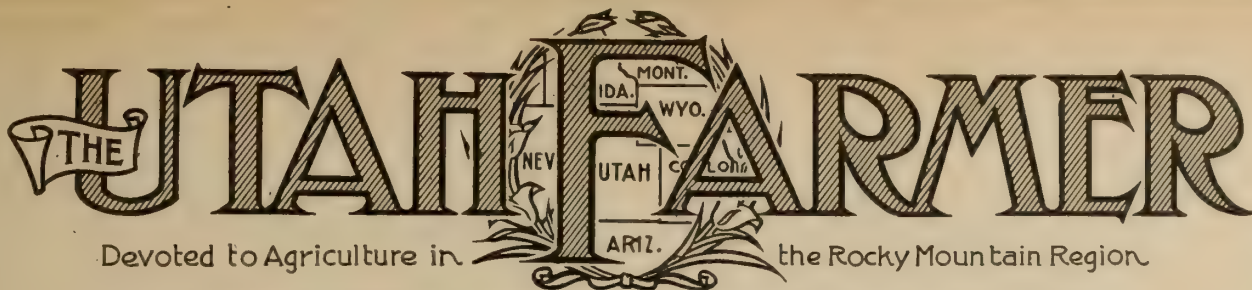
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VOLUME XIII.

LEHI, UTAH, SATURDAY, SEPTEMBER 30, 1916

No. 9

Agricultural Agencies

by Dr. A. C. True, Director States Relations Service, U. S. Department of Agriculture.

It is understood that the discussion of this subject will be confined to the following agencies: State Departments of Agriculture, State Agricultural Colleges, Experiment Stations, Extension Services, County Agents, and Farm Bureaus. The term "agriculture" will be used in its broad sense to include (1) plant production, embracing agronomy, horticulture and forestry, (2) animal production, (3) agricultural technology, embracing dairying, sugar making, etc., (4) rural engineering, and (5) rural economics and sociology.

The relationships of different parts of an organism cannot well be determined and understood without a knowledge of the functions of each of these parts. Discussion of the functions of the different agencies for the promotion of agriculture should therefore precede discussion of their relationships. We should know in the first place what are the functions of government relative to agriculture and country life which may be differentiated from those functions exercised in behalf of all industries and people.

The difficulty of stating the functions of government relative to agriculture is greatly increased in our time because of the rapid shifting of public opinion regarding what government may properly do. Take, for example, the question of the State's functions regarding the marketing of agricultural products. Shall the State confine its activities in this line to the collection and dissemination of information regarding marketing conditions? Or shall it go further and establish public markets or take under its control the standardizing of products or even engage to some extent in finding markets and conducting sales? It seems clear that we are not yet ready to go as far in these directions in the United States as some foreign countries have gone. For instance, in Denmark, while there is much of voluntary co-operation in the dairy business, the government is very largely taken this business under its control.

In a general way, however, it may be said that the following functions are now commonly admitted to be proper for the state governments to exercise: (1) Regulatory functions, such as are included in the control of fertilizers, feeding stuffs and dairy products; quarantine and other preventive measures relating to plant and animal diseases; the management of state forests, etc.; (2) Systematic collection and interpretation of statistics and other economic data regarding agricultural industries year after year on a state-wide scale; (3) Promotion of

fairs or expositions; (4) Teaching of agriculture in colleges and schools; (5) Research in agriculture; (6) Instruction of agricultural people in their communities and homes. (Extension work.)

To perform these functions the State needs only two institutions—a State Department of Agriculture and an Agricultural College. This, however, leaves out of account the problems connected with the teaching of agriculture in secondary and elementary schools, which were not included in the subject as stated for this meeting.

The State Department of Agriculture should perform the first three governmental functions stated above, i. e., regulatory, collection of information, and promotion of fairs.

The State College of Agriculture should confine itself to the educational functions, i. e., teaching, research and extension work. The experiment stations are as a rule the research divisions of the agricultural colleges and should not be considered separate institutions.

As the fundamental step toward determining the relationship of the State Department and the College, the State Legislature should enact laws in which the functions of these two institutions are clearly defined and differentiated. In most lines their work should be made separate and distinct. But inasmuch as absolutely logical divisions of such a subject as agriculture in its broad sense are impracticable the law should provide for and as far as possible define co-operation between these institutions.

Thus far there has been very little attention given by State legislatures to the systematic organization of our agricultural institutions. This is particularly true of the State departments of agriculture and the various boards and commissions which have been created to exercise governmental functions relating to agriculture. Hence we find in the United States as a whole a great variety of duties imposed upon such organizations. Some of these are clearly in the educational field. Others have little, if any relation to agriculture.

In many States these organizations are constituted and managed on a political basis and are very often within the field of petty politics. The chief positions in them have not been of sufficient dignity or influence to attract first-class men and the subordinate force has lacked expert quality. The creation of boards of agriculture or of its different branches has followed a traditional plan, inherited from England. These boards as a rule have been weak and vacillating, and therefore comparatively inefficient for administrative purposes.

(Continued from page 7)

Dairy Extension Work

Everyone who has made a study of conditions necessary for successful dairying, says that Utah is ideal. Local people who have gone away to compare conditions and experts of national experience all say, that Utah should make a good dairy state. If this is true why don't we do more along this line. Certain sections are now making good money.

With the hope of creating interest along this line we are going to give a part of the report of W. Scott Mathews, Dairy and Food Commissioner of Illinois, made to the members of Business Men's Dairy Extension Movement. In part he says:

Our aim is to get more cows and better cows for the farmer and to encourage him to conduct his dairy business according to the most approved methods.

The principal forces in the field that are co-operating with us to secure these results are:

The Illinois Bankers' Association.

The Business Men's Dairy Extension Movement of Illinois.

The Illinois State Dairymen's Association.

The Railroad Companies.

The Commercial Clubs.

Three active campaigns are now under way which I will describe briefly under their respective headings:

Dairy Day Celebrations. These are held under the auspices of the commercial club in the town selected, and the celebration is enlivened with a parade, speeches, cow-judging contests, milking demonstrations, moving picture exhibitions and other attractions. The high-grade cows purchased by the banks, and the pure bred bulls contributed by the railroads for the use of the farmers, are featured in the parade.

Calf Clubs: The banks organize these clubs for the purpose of arousing interest of the children in the dairy industry. For example, a bank announces that on a certain date it will give highgrade heifers and yearlings to the care of boys and girls in the community whose fathers or relatives agree to sign notes running for ten or twelve months. At the end of this period, the bank agrees to hold a public sale at which the children are to be given the profit realized on the animals they have cared for; or if the note is paid, they are allowed to retain possession. As the animals have by that time increased in value and most of them have calves, the profit is a substantial one.

County Farms: This is a plan to co-operate with the county authorities to introduce a model dairy on every County Farm for the Poor. It is pointed out that this will prove not only a profit to the institution, but will be a strong influence on farmers in that county to adopt a similar policy. It is recommended that the dairy so introduced, be conducted as a practical

demonstration farm for the benefit of the community.

The parts taken by the different forces committed to the one purpose—that of getting the farmers to take up dairying on profitable lines—are as follows:

The banks finance the project; that is they furnish the capital to purchase the high-grade cows in carload lots and turn them over to the farmers, accepting the latter's notes as payment.

The railroads contribute the use of the pure-bred bulls to the farmers along their lines, that the herds may be built up and improved.

The Business Men's Dairy Extension Movement of Illinois, works in direct conjunction with our department to get things started and to pave the way for the operation of the banks and the railroad companies. This organization furnishes the funds for the initial expenses. At the present time our department is forced to work without the aid of an appropriation from the state, but we are in hopes, from the showing made, that this will be granted.

Our plan for introducing dairying in a district necessitates arousing favorable sentiment. It is necessary to interest the business men so that they will advance the capital to enable the farmers to take up the work. As a first step, we call a meeting of the bankers and merchants, including representatives from the commercial club, and explain to them the benefits to be derived from dairying properly conducted. Our argument is that good business in the town is dependent upon the prosperity of the farm region surrounding it.

Then a second meeting is held to which the farmers are invited. When a sufficient number become interested to justify the purchase of a carload of cows, we are ready to go ahead.

We furnish an expert from our department, and the farmers and bankers select a man, and the two go to some dairy district where high-grade cows can be purchased under favorable circumstances.

Our man subjects them to a tuberculin test, and also advises the representative of the farmers and bankers as to the true value of the prospective purchase.

It is stipulated that the animals shall be delivered to the communities and sold at exact cost, plus the freight and necessary expenses; as we could not afford to be involved in a transaction that had for its object private gain. As a precautionary measure we insist on duplicate receipts being furnished by the dealer.

After the cows are placed, our expert is instructed to remain over night with the farmer and to get up in the morning and help him feed

(Continued on page 4)

Will You Help?

For your own good, will you help save the fruit crop? There's plenty of fruit this year. But the question is, will housewives save it, or will it spoil? If saved, the U. S. Government considers it will be a big help in keeping down the cost of living.

Plenty of good canned fruit is always relished by the family. When you figure the cost, it is one of your most economical foods. Use pure sugar to insure its wholesomeness.

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Associate yourself with a growing bank.

Records of deposits of this institution.

1912	\$3,200,000
1913	3,800,000
1914	4,500,000
1915	5,300,000
July, 1916	6,500,000

AN INCREASE OF \$3,300,00, MORE THAN DOUBLED IN FOUR YEARS.

Walker Brothers
Bankers
SALT LAKE CITY



DAIRY EXTENSION WORK

(Continued from page 3)

and milk the new stock. He advises the farmer as to proper feeding methods, sanitary measures, and how to market the milk most profitably.

We keep posted by a follow-up system. Our representative repeats his visit to see that his instructions have been fully understood and that all is working well with the farmer and his new cows.

A fund of \$10,000 has been raised and more pledges are coming in. All expenditures of this organization for dairy promotional purposes are authorized by the members of this Board.

As for results, I am glad to say we have made important progress and we have a very encouraging future.

Seventy-five carloads of high-grade milk cows and heifers have been placed with farmers in Illinois, and we now have orders for 18 carloads more.

About 30 bulls have been allotted to communities by the New York Central railroad and the Illinois Central railroad.

Five calf clubs for children have been organized by the banks and more are in the process of formation.

Authorities in many counties have endorsed our plan for model dairies on County Farms for the Poor.

We have held a number of Dairy Day celebrations which have proved a great stimulus to dairy farming. As a result of these meetings many herds of fine dairy cattle have been placed and a more effective spirit of co-operation between the business men of the town and the farmers has sprung up.

Over 15,000 persons attended our Dairy Day celebration at Carbondale. The first shipment of cattle purchased through co-operation of the banks and allotted to the farmers on that occasion, has been followed by many others.

Dairy Days on a smaller scale but very productive of satisfactory results were also celebrated at other places.

Mr. Mathews has received many letters from the farmers to whom the cattle were sold, expressing the satisfaction and profit that has come to them from buying good dairy cows and following modern methods.

When will Utah get together and do something along this line?

NICKING

The breeding of domestic animals along scientific lines has brought into use the common term "nicking." By it we mean the mating of the two sexes in such a way that the resulting offspring will inherit the qualities of its parents, or that if there is any variation from its parents that it will be an improvement and not a retrogression. Desirable animals in themselves often become the parents of inferior offspring, and it not infrequently happens that an inferior animal becomes the dam or the sire of a superior animal. The uncertainty of results from breeding animals has therefore centered itself on this principle of nicking.

How we may secure the proper nicking is the problem in the breeding of animals. A whole lot is yet to be learned through scientific investigation as to what laws of inheritance have been well established and that is that concentration of blood is the biggest factor. Any forces that work parallel and in harmony or that concentrate upon a given object make progress. It is in sharp distinction with divided effort working at cross-purposes

FREE to all owners of cows

If you keep cows you ought to write for this book

THIS book was written for the man with only two cows just as much as for the man with twenty. In it has been gathered together a great fund of valuable information on subjects which are of vital interest to every cow owner. And while the various phases of dairying are treated by the best and highest authorities, it is not a technical treatise but is written in plain every-day language so that even the children can understand it.

Here are just a few topics that will give you an idea of the practical nature of its contents:

"How a Dairyman Made Good"—a real story of a real farmer, who starting with almost nothing, built up a fine dairy herd and made a big success.

"Year Around Feeding of Dairy Cows"—by an authority whose advice is well worth heeding. The importance of proper feeding deserves more attention from every cow owner.

"How to Judge a Dairy Cow."—shows by illustrations what points to look for in a dairy producer—explains the essential qualifications of a good dairy cow.

"Building Up a Dairy Herd"—a practical breeder gives some sound advice on this important subject.

"The Farm that Won't Wear Out"—shows that the farm where cows are kept, and the fertility returned to the soil, improves instead of deteriorates.

"The Care of Cream on the Farm"—quality is as important as quantity. It costs little and brings big returns.

"Silos and Silage"—one of the best chapters in the book. Full of silage facts that every farmer ought to know.

Then there are splendid articles on "Alfalfa," "Ventilation of Dairy Barns," "Breeds of Dairy Cattle," "Improving the Herd with a Good Bull," "Care of Freshening Cows," "How to Test Cows," etc. Numerous dairy rations, suitable for various sections of the country, are given, and various milk and dairy tables as well as tables of weights and measures, silo capacities, etc. that every farmer has occasion, at some time or other, to refer to.

Thousands of dollars have been spent in the preparation of this book, and if you keep cows you certainly ought to write for a copy and read it from cover to cover. The book is absolutely free. Just fill out the coupon or send the information requested on a post card, mentioning this paper.

The De Laval Separator Co., 165 Broadway, New York

Please mail me, postage free, a copy of your New Dairy Handbook. I keep _____ cows. I sell cream, make butter, sell milk (cross out whichever you don't do). The make of my

Separator is _____, used _____ years

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acres excellent land, with first-class water right, southern Idaho, close to a good town and on the main line of the railroad. \$80 per acre, 10 per cent down and ten years on the balance at 6 per cent interest. Can sell in forties.

on part of 180 acres in the Bear River valley at \$29 per acre. This land is under the canal. Can be dry farmed for five years, at the end of which time water will be sold for it at \$59 per acre.

acres between Garland and Tremonton. All irrigated from the Bear River canal. This land can be had on excellent terms at \$120 per acre.

acres on main County road. 60 acres in alfalfa. 40 acres sugar beets, family orchard. Balance plover land. 5-room frame house, barn, granary and other outbuildings. Abundance of water for the above land. This place can be divided into 40 or 80-acre farms at \$115 per acre, on easy terms.

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56-58 Main Street,
Salt Lake City, Utah.

Phone Wasatch 963

As man advances in the scale of civilization he is disposed more and more to specialize in order that he may become more skillful in some one line and make the best of the opportunities that it affords; he concentrates. When a farmer specializes in beef cattle he invariably strives for the best in that class of animals. If it is the line of dairying, he concentrates on special milk producing animals. If he is at all enlightened he wouldn't think of breeding his dairy cattle with the beef type and hope for a nick. Instead, he carries his specializing still farther and adopts a breed. It may be the Holstein, the Jersey or one of the other breeds, but he stays by it because of reasonable certainty of maintaining high dairy qualities in the offspring. And what is the next step? Simply that of carrying the process of concentration and specialization within breed lines, meaning strains and families. A Holstein or a Jersey may be pure bred and still be "merely" a Holstein or "merely" a Jersey or they may be a Pontiac, a King Segis, a Colantha or a Golden Lad or an Eminent and that means something worth while in present-day dairy breeding, because it brings us just that much nearer to the goal of definiteness—of nicking in breeding.

And this specialization and concentration in breeding is nature's way. She doesn't permit mixing. She divides living things into kingdoms, kingdoms into species, species into genera, and genera into families and sub-families, as our botany text books tell us. Grass don't breed with clover, for breeding takes place only within closely circumscribed lines and the closer the more certain is the law of heredity fixed. In breeding within certain families and strains the farmer is helping to carry nature's process still farther to the end that nicking may become a definite factor in his operations.—Pacific Dairy Review.

QUESTION AND ANSWER

Glendale, Utah.

Utah Farmer:

Would like to know just how much hay (lucerne and wild hay both) is required per day to keep lambs and ewes in a thriving condition during the winter months? Please give rations where both grain and hay are fed.

Very Respectfully,

Subscriber.

Answered by Dr. W. E. Carroll.

Ewes and lambs can be kept in a thrifty condition during the winter on from one to three pounds of hay and half a pound of grain per day per head. With the larger amount of hay no grain need be fed. A ration of 1½ pounds of hay and 1½ pounds of grain per day has been found to give good results. By increasing the hay to 2½ pounds per day the grain has been cut to ½ pound per day.

PULLING FOR PUBLICITY

An old fellow on his deathbed, in making his will, murmured to his lawyer:

"And to each of my employees who has been with me twenty years or more I bequeath \$10,000."

"Holy smoke! What generosity!" the lawyer exclaimed.

"Not at all," said the sick man. "You see none of them have been with me over a year; but it will look good in the papers, won't it?"



The Milk Pail Tells

After you have been feeding "Sunripe" Stock Feed for a few days, you'll note a marked increase in the flow of milk from your cows.

It's a highly nutritious food for milch cows, being a well-balanced mixture of oats, barley, cotton seed meal and sugar beet molasses.



The cost of every pound you feed your cows comes back to you in extra milk and with the better health of your stock.

"Feeding for Results" is the title of our booklet on scientific stock feeding. Your copy will be mailed on request.

Utah Cereal Food Co.
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We will be at the Utah State Fair September 30 to October 7 and will there exhibit the Grand Champion Richards Defender together with a superb lot of sows and spring pigs.

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THE UNPROFITABLE SCRUB HOG.

Possibly there is no other farm animal that can offer as poor an excuse for his existence as the scrub hog. He is an unprofitable animal any way you take him. There is no standard of excellence for him. He can not resist disease any better than any other hog. His narrow body, long legs, helps him in getting through cracks in fences and climbing out of pens. He can consume more valuable food and give less for it in return than any other animal.

A man who owns many of these scrub hogs can never get rich selling pork. The scrub hog will help to keep any man poor.

If you happen to have any scrub hogs get rid of them. Buy a good sire and breed for better pigs.

START IN A SMALL WAY.

Many of the most successful business men began in a very small way. Not a few of the biggest poultry raisers may be put in the same class. They derived their liking for the business and got their first experience in raising Bantams when they were boys. Let the boy have some chickens, a calf or a pig.

If they are given the care of these animals they will learn to like them. They will learn from

practical experience how to feed and care for them, and as the children grow in years their love for livestock will increase. Every boy on the farm should be given some chickens or livestock. Let them start in a small way and grow into the business.

YOUR PROBLEM.

There are problems on every farm. Every farmer must learn to solve his own. He must be a student of his own conditions. You can have advice—expert advice—but, after all, you and you only must solve the problems. You failed to get as maximum crop of this or that—why? Does your ground lack fertility—have you studied out the reason? It may be a lack of tillage, plowing the right depth, or in cultivation. Have you studied crop rotations, as best adapted to your land? These and many others are your problems—problems that you must study, if you want to be successful. The difficulty does not lie so much with the farm as it does with the man that is upon it. He must use brains as well as brawn.

SUGAR BEET CROP.

The final estimates for the sugar beet crop this year are for a greater production than those in the spring. Increased acreage will make a greater tonnage.

Right now is when the sugar beet farmer is busy, preparing for the plowing and harvesting of his crop.

The late spring has delayed the crop somewhat, but within a few days, two weeks at most, nearly all of the factories will be running.

The tonnage per acre will not be quite so high as last year, on account of the dry cold winds, and late frosts this spring. We were told, however, of one patch of beets of 25 acres that will average over 30 tons per acre.

The farmer this year will receive an increase in price for his beets. Considerable over 10,000 farmers have beet acreage, and with a normal crop, one can see what a lot of work there is ahead for the next month or so.

TOO MANY BOARD AND COMMISSIONS

We have in the state today too many boards and commissions, according to the modern way of doing things.

We might name a number, that are all related to agricultural work, yet they are all separate, and they lack efficiency, because they do not work together. Such boards or commissions have been multiplied to such an extent as to cause much unnecessary confusion, overlapping and duplication. We should modernize our system. This might apply to our system in general, but we want to emphasize only the agricultural at this time.

In New York, Pennsylvania and Ohio, they have done away with all the agricultural boards and commissions, and placed them under one head, the commissioner of agriculture. In other words, there has been a consolidation of all these boards and commissions. To a certain degree, they have patterned after the United States Department of Agriculture, only on a smaller scale.

Utah is pointed out as one of the most backward of our states, in bringing about modern changes in this part of our agricultural work.

In our State, the work of these boards and commissions is not correlated, and what we want is a change, in order to bring about a greater

efficiency and, if possible, a reduced cost in the administration of our agricultural affairs.

HELP FOR THE ASKING

Something for nothing is so unusual, that we generally feel suspicious about it when it is offered.

From another point of view, it is not "something for nothing." It is taking advantage of what we are paying for.

Our Government and State are paying out a great deal of money to help the farmers. Do we take advantage of it, or do we know what we are entitled to?

To make our point more plain, let us give an example. Suppose we have some land that needs draining; suppose that a number of farmers want to drain a tract of land, do you know that you can secure government and state experts to help you?

From their experience and technical training, they will tell you if the proposition is practical; estimate the cost, and tell you in a general way all about it.

In talking with one of these men the other day, he seemed to think there was a lack of interest in his work. He said he was ready to help anyone in the state. We told him that the people did not understand the conditions. We are sure that many of our readers do not seem to know that they can secure this help for the asking. It is not confined to any one line of work either, but to many.

Write to the Utah Farmer, if you do not know where to find these men. Write to the Agriculture College, and tell them your problems. Ask us questions along any line of agricultural work for we want to help you.

ORGANIZE TO GET FEDERAL AID

The sentiment of the Federal Land Bank commissioners, when here a short time ago, was that they wanted to deal with the farmers. The law is such that it is necessary for farmers to get together and organize, in order to take advantage of the new Federal Farm Loan Act.

Some districts are already at work, they are holding meetings, inviting speakers, men who have made a study of the new law, to come and talk to them.

They are taking the right course, carefully studying the new law before they act in the matter. The farmers must get together and organize associations, and be ready as soon as the commissions are ready to start the Federal Banks.

The Federal Board warns the farmers against solicitors, who claim they are acting under the Federal Farm Loan Act, and asking advance payments for stock. "No money should be paid to any person for stock or expenses, no matter what the representation may be," according to the secretary of the Federal Land Bank Board.

The law will not come into operation until the Federal Land Banks have been established. The Farm Loan Associations, the machinery for borrowing, are to be created by the farmers themselves, and this is what we recommend the farmers to do, prepare to organize. It will not be necessary to pay out any money, for expense or other purposes, until the time the loan has been made. The best thing that farmers can do now is to study the new law, get acquainted with its workings, and make preparations for using it at a later date, which will be some time after the first of the year.

AGRICULTURAL AGENCIES

(Continued from page 3)

It is believed that a State Department of Agriculture, somewhat on the Federal plan, with a single head responsible to the Governor is likely to be most useful and efficient. By combining all the governmental functions relating to agriculture in its broad sense in one department a strong organization may be created. Thus the office of State Commissioner or Secretary of Agriculture will be sufficiently high and influential to attract first-class men. While the head of this department would almost necessarily be selected on a political basis since he would be a member of the Governor's Cabinet, his subordinate should be permanent and non-partisan officials chosen under civil-service regulations. This would make possible the creation of an expert force who would conduct the regular business of the department. In this way the State Department of Agriculture would secure the confidence and support of both rural and urban people and make a real contribution to the agricultural progress of the State.

Because the State departments and boards of agriculture have in many cases been weak and partisan the people have demanded and legislatures have conceded that certain governmental functions relating to agriculture should be turned over to the agricultural colleges and experiment stations. These institutions have therefore taken on much regulatory work. While this has brought them additional influence and funds it has often interfered seriously with their highest efficiency as teaching and research agencies. The heavy burden of routine connected with inspection work has in many cases converted men who promised to be high-class teachers or

investigators into administrative officers of limited influence and narrow outlook.

In recent years there has been a growing tendency for our State colleges and universities generally to take on governmental functions and to organize within themselves administrative and regulatory bureaus. It is believed that this is unfortunate. The necessities of such business and the political relations which they involve are likely to destroy the academic freedom of educational institutions and weaken or bias their teaching and research. It will be far better for our agricultural colleges and experiment stations to divest themselves of the inspection work and other governmental functions they are now performing and confine themselves strictly to educational work. It is of course understood that practical rather than merely theoretical considerations must necessarily govern the details of the organization and work of State institutions. Rapid and revolutionary changes in the constitution of these institutions are often disastrous. But it is believed that evolution of these institutions in the directions indicated in the foregoing statements will be for the best interests of both the State departments and the colleges.

There is at present a growing movement for the co-ordination and consolidation of State institutions and in some places this is being carried to an extreme. It is often urged that the State department of agriculture and the agricultural college should be united under a single administrative head or board. The instances in which this has been done are not favorable to this arrangement. One of the oldest examples is in Michigan where for many years the State board of agriculture has had charge of the college, but in this case the functions of a State department of agriculture have only been developed to a small extent, since the board has acted mainly as a board of trustees of the college. In Oklahoma a similar arrangement has resulted in administrative and political difficulties which have kept the affairs of the college in a disturbed condition. Ohio recently undertook to consolidate its State board of agriculture, agricultural college and experiment station under a single commission but with such unsatisfactory results that it has again separated these institutions with certain reorganizations in the right direction. The question of consolidation is now under discussion in the Maryland legislature. At first blush the arguments for such consolidation seem very plausible but mature considerations will show that administrative union of governmental and educational institutions is not desirable.

Turning now to the county agencies for agricultural promotion we have two new factors which involve somewhat complicated relationships. The county agents and farm bureaus are in an experimental stage. There is not yet a settled consensus of opinion as to the proper character and range of their functions. Taking the country as a whole the county agents are now being called upon to perform a great variety of duties. In many cases it is clear that they are individually attempting to do altogether too many things. Some of these are even of doubtful propriety for public officers to perform. In some counties the agent is mainly expected to respond to calls from individual farmers. He may spend much of his time in doctoring sick animals. In other cases he is largely

(Continued on page 14)

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TYPHOID FEVER AND THE FARM WELL

How This and Kindred Diseases may
be Decreased.

Typhoid fever, infant mortality, gastro-intestinal disturbances and many other intestinal diseases that are prevalent in the fall, especially in rural communities, can be greatly reduced in number and severity of cases if proper precaution is taken with water supply, according to Dr. J. E. Greaves, bacteriologist of the Utah Agricultural College. Dr. Greaves offers the following very interesting information coupled with many practical suggestions:

We are rapidly nearing the season of the year when many of the inhabitants of rural districts will be suffering from various intestinal disturbances and it becomes very pertinent to inquire: Why is it that in so many rural districts various intestinal diseases are more prevalent than they are in large cities, when the reverse should be true? We find at least a partial answer to this question in the difference in water supplies of the two districts. In the cities the water supplies are usually carefully guarded against contamination, while in the country districts the supply of water is usually obtained from wells and these in many places are shallow and what is worse than that, not protected from the filth which may be carried in from the top. Eminent authorities on this subject found that where one death from typhoid could be prevented by improving the water supply, two or three deaths from other causes could be prevented by the improvement. An improved water supply not only reduces the number of deaths from typhoid fever, but decreases infant mortality and the death rate from gastro-intestinal disturbances. This is due not only to the removal of disease-producing organisms from the water, but there are many other substances and organisms in impure water which greatly reduce the bodily vigor of the individual using it. And anything or condition which in any way reduces the bodily vitality makes the individual an easy mark for disease.

Many wells are only loosely covered with planks between which grasshoppers, toads or leaves make their way. It is easy to see how the filth from the boots of working men or from children playing on the planks or from poultry walking about and carrying infection on their feet may get into the water and pollution may easily take place. One need not go far into this country to find places where the out-houses are freely open at the back, so that fowls can walk under and from there onto the planks covering the well. All this filth left by them on the cover of the well is later washed into the well. This could do little harm if the disease germs were not present. But one never knows when they may be present. It is not enough to know that no case of typhoid has been upon the premises for it is often the case that apparently healthy individuals are carrying within or excreting from their bodies the disease germs.

For these reasons the old planks which cover so many wells should be replaced by a tight fitting cement platform, covering not only the surface of, but several feet surrounding the well and passing into the ground three or four feet so that all the water which finds its way into the well must pass through several feet of firm soil. Under these conditions, the well if fair-

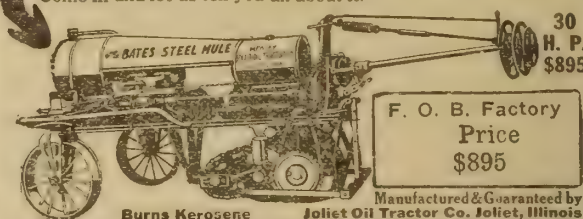
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Royal Baking Co., Salt Lake City, Utah

ly deep can be depended upon for water. Where water is known to be, or strongly suspected of being, contaminated, the only remedy is to boil the water before use. The many filters which are being offered to the public cannot be depended upon unless they are so constructed that they can be taken apart every day and thoroughly cleaned by heating to a red heat.

THE PENALTY

A political speaker, warning the public against the imposition of heavier tariffs on imports, said, "If you don't stop shearing the wool off the sheep that lays the golden egg, you'll pump it dry."—Christian Register.

"Who learns and learns, but acts not what he knows is one who ploughs and ploughs, but never sows."

PERSONAL CHARACTER AND
SHORT-TIME FARM LOANS
C. W. Thompson, Specialist in Rural
Organization.

"The borrower who is known to be a man of honesty and integrity and who shows ability and judgment in the conduct of his farm business will ordinarily command the confidence of his banker and obtain credit on terms relatively favorable for his class of loans, whereas the individual who is uncertain in his personal character, erratic in his judgment, and irregular in his business habits will be considered a less desirable risk and, if he obtains a loan at all, usually must pay a higher rate of interest. In any case, if credit is to be extended wisely it is just as important to discourage its use among those who can not be trusted as it is to grant credit to trustworthy borrowers who will use the borrowed money profitably and repay it promptly.

"Often times the borrower may be honest and upright in his intentions, but may fail to appreciate the importance of being prompt in meeting his obligations. Possibly he thinks that a few days after the date of maturity is soon enough to make payment, and that a little delay is unimportant. He may not stop to consider that extra work and expense are involved when notice must be given of overdue paper, or that bank examiners do not take kindly to notes that are overdue.

"Again, the business ability and business habits of the farmer are tested when the banker asks for a statement of the borrower's business. This information is needed by the banker as a basis for intelligent rating. If the borrower is in the habit of keeping accounts and can explain the nature of his resources and liabilities

and thus indicate accurately his financial standing, the wisdom of granting a desired loan as well as the proper terms thereon readily can be determined. On the other hand, if this information is lacking and the banker is in doubt about the safety of a particular loan, he is likely to charge up his uncertainty to the borrower's account in the form of a higher rate of interest.

"The requirement that a borrower shall submit a statement of his business is being applied by bankers in their dealings with merchants and manufacturers. Accordingly, business men in general have become more or less familiar with this requirement, and are prepared to furnish such a statement whenever it is called for. Some bankers, in inaugurating a similar plan in connection with their farm loan business, are supplying farmers with especially prepared blanks or rate sheets, on which the farmers furnish the desired information."

ON OPPORTUNITY

Someone has said "God does not give us results, only opportunities." Many of us long for the ability to recognize opportunity, we earnestly seek it, never realizing that opportunity is ever present in the work we are doing, no matter what it may be.

The ability to improve our opportunity is furnished by the zeal we put into our present tasks.

The salesman who works diligently through the business day need not be brilliant, nor gifted with the talent of oratory, yet if he loiters not, if he sincerely and earnestly buckles down to the task of representing his house, he is bound to win.

The man that banks his small savings from meager earnings will end up a more affluent man than the one of large earnings with little thought of conservation. Just so the man who invests diligence in his work will profit in greater ratio than the man of greater talent but less application.

"Seest thou a man diligent in his business? He shall stand before you?"

kings," is a twentieth century maxim. —The Addressograph.

A FEARFUL THOUGHT

Burroughs—I know a man who looks so much like you that one could hardly tell you apart.

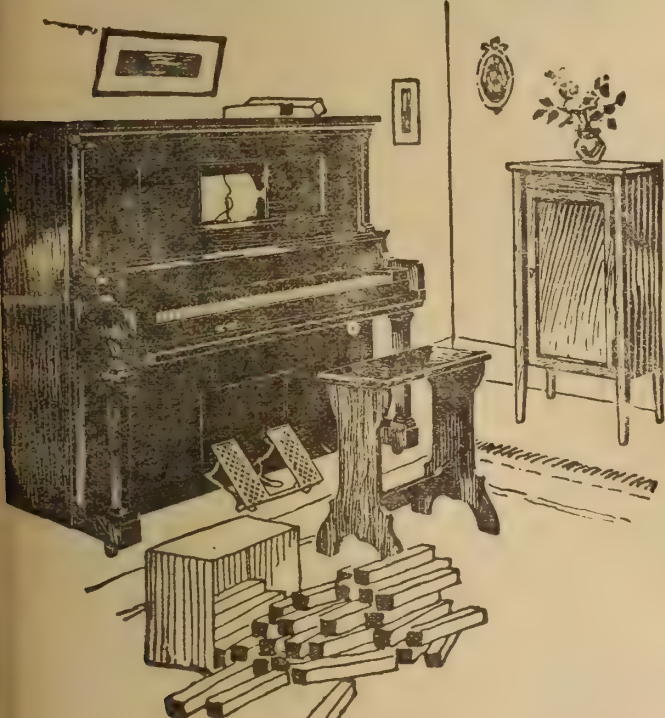
Lenders—You haven't paid him that five I lent you three months ago, have you?

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Great Bargain
Fully Paid Up Water Right

in one of the best canals in the State. 160 acres all fenced and in cultivation.
REASONABLE TERMS
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With Beautiful Music Cabinet and 30 Rolls of Music.
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The Aeolian Player-Piano is entirely above the class of other player instruments advertised at low prices.

For price is not the first consideration in this instrument. It is the highly perfected and finished product of the largest manufacturers of musical instruments in the world—the concern known everywhere as the leader in fine player construction—the Aeolian Company. So quality is the first requirement in the Aeolian Player—quality worthy of the unqualified Aeolian guarantee.

Its wonderful pneumatic system, because of many patented and exclusive features, is unequalled in responsiveness, musical capability and ease of operation. A remarkable perfection is evident in every part that is a factor in securing musical excellence—for this Aeolian Player-Piano, remember, is the work of the men who have made all of the world's finest players.

The piano quality of the Aeolian Player is also very superior. The tone is rich, smooth and big in volume. The action is quick and well-balanced—delightfully satisfactory to the person who plays by hand. The tone experts who have made the famous Weber and Steck Pianos such magnificent instruments, have given their best skill to the Aeolian Player-Piano also, and have helped to make it one of the greatest triumphs of the Aeolian Organization.

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First of all Reliability—our Fifty Fourth Year.

HOME

THE NOON MEAL

(From bulletin sent out by the Utah Agricultural College.)

With the beginning of the school year the problem of the noonday meal and the basket lunch are with us again. We give a brief review of Farmers' Bulletin 712 entitled "School Lunches" written by Miss Caroline L. Hunt. This may be obtained by writing to the Department of Agriculture, Washington, D. C.

The Noon Meal.

The importance of well made bread in the child's diet is emphasized, also the use of a variety both in kind and shape. In addition to white bread, whole wheat, graham, nut, in the form of rolls and twists, with a change in flavor obtained by adding raisins, dates or nut meats. With bread should be served muscle and flesh forming foods such as meats, eggs, cheese, dried beans and peanuts. Milk, milk soups, milk puddings are all valuable for the noon meal. Green vegetables and fruits are an essential. Plain desserts are advised such as custards, plain cakes and cookies, fruits, and avoidance of highly flavored and spiced foods. In order to avoid hurry at the noon meal, it is suggested that all possible preparation be made beforehand.

Suggested Bills of Fare for the Home Lunch.

1. Eggs, boiled, coddled, poached, or scrambled; bread and butter; spinach, or other greens; cake.
2. Beef stew with vegetables; milk; crisp, thin tea biscuits; honey.
3. Dried bean or pea puree; toast; baked apple; cookies.
4. Vegetable-milk soup; zwieback; rice with maple sugar and butter or with milk or cream.
5. Potato chowder; crackers; jelly sandwiches.
6. Cold meat; creamed potatoes; peas; bread and butter; frozen custard, or plain ice cream and plain cake.
7. Lamb chop; baked potatoes; bread and butter; sliced mixed fruits; cookies.
8. Baked omelet with spinach, kale, or other greens; bread and butter; apple sauce; cake.
9. Milk toast; string beans; stewed fruit; cake.
10. Boiled potatoes; codfish gravy; bread and butter; lettuce; custard.

The Basket Lunch. The importance of the packing of the basket lunch is emphasized.

Paper napkins in place of towels, and paraffin or parchment paper for wrapping, serve to keep the food in palatable condition.

Bills of Fare for the Basket Lunch

1. Sandwiches with sliced tender meat for filling; baked apple, cookies or a few lumps of sugar.
2. Slices of meat loaf or bean loaf; bread and butter sandwiches; stewed fruit; small frosted cake.
3. Crisp rolls, hollowed out and filled with chopped meat or fish moistened and seasoned, or mixed with salad dressing; orange, apple, a mixture of sliced fruits, or berries; cake.
4. Lettuce or celery sandwiches; cup custard; jelly sandwiches.
5. Cottage cheese and chopped green-pepper sandwiches or a pot of cream cheese with bread-and-butter sandwiches; peanut sandwiches; fruit; cake.

SPEAKING OF NAMES

When the priest was about to christen the baby he asked: "What do you wish to name the child?"

"Hazel," replied the sponsor.

"Glory to Saint Patrick," said the priest; "there's hundreds of good old saints' names, and they want to name this child after a nut."

Is Your Wagon Deformed?

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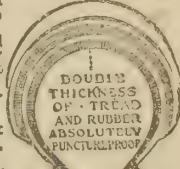
Double Service Tires are made double the thickness of the best standard make tires.
This 100% greater wearing surface naturally gives them much more mileage and service. The average of 12 miles of tough fabric and one inch surface tread rubber makes these tires absolutely punctureproof.
These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—the air space and pressure being the same.
They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service tires are in use in the U. S. government and European War service.
Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer:

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30x3 in.	\$8.69 \$2.30	36x4 in.	\$17.46 \$4.66
30x3 1/2 in.	10.55 3.10	36x4 1/2 in.	21.20 5.60
32x3 1/2 in.	12.75 3.20	38x4 1/2 in.	23.00 5.75
34x4 in.	16.75 4.20	38x4 3/4 in.	23.00 6.20
34x4 1/2 in.	16.70 4.55	38x5 in.	25.00 6.50

All other sizes not included in above list also furnished. Non-skids at 10% additional price. Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.

Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Descriptive folder upon request. Write for it.

Double Service Tire & Rubber Co., Akron, O. Dept.



Mention Utah Farmer when you write

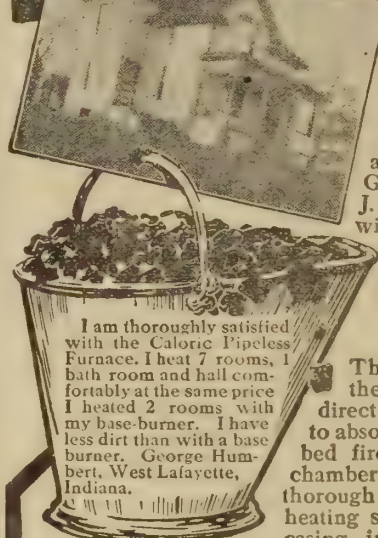
6. Hard-boiled eggs; crisp baking-powder biscuits; celery or radishes; brown-sugar or maple-sugar sandwiches.

7. Bottle of milk; thin corn bread and butter; dates; apple.

8. Raisin or nut bread with butter; cheese; orange; maple sugar.

9. Baked bean and lettuce sandwiches; apple sauce; sweet chocolate.

Less Coal Than One Base Burner



I am thoroughly satisfied with the Caloric Pipeless Furnace. I heat 7 rooms, 1 bath room and hall comfortably at the same price I heated 2 rooms with my base-burner. I have less dirt than with a base burner. George Humbert, West Lafayette, Indiana.

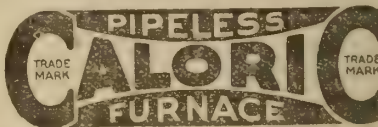
The testimonial of Mr. Humbert is NOT an exception. This letter is one of hundreds filed in our office.

C. F. Hall, Henderson, Ky., heated 7 rooms all winter for \$18.00. L. M. Sagendorf, Greenville, Mich., used only 5 tons of coal. J. M. Pate, Rising Sun, Ind., heated 7 rooms with 175 bushels of coal.

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There are three reasons for this big saving. 1st, the warm air reaches your rooms by nature's direct method of circulation and there are no pipes to absorb or resist the heat. 2nd, our double ribbed fire-pot and specially patented combustion chamber produce perfect combustion thus insuring thorough burning of the fuel and a much greater heating surface. 3rd, our specially patented triple casing, insulated with air spaces, prevents any heat from radiating into the basement. This is the only successful patented one-register furnace and no other furnace can claim these three big features.



The Original Patented Pipeless Furnace

Burns coal, coke or wood, and you save money whatever you use. It costs less than any other furnace because you do not have to pay for a lot of pipes.

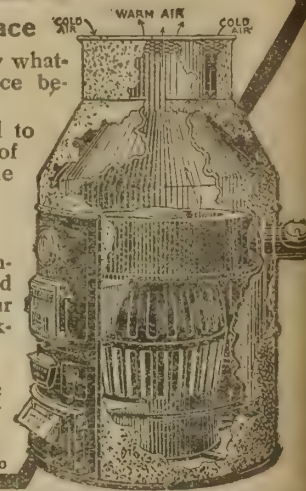
Install in any house new or old. Well adapted to old houses because you don't have to cut a lot of holes for pipes and flues. Just one hole for the register. It always gives full satisfaction.

Read This Guarantee

It is given to prove our confidence in this wonderful furnace. Put the Caloric in your house and give it a fair trial. We guarantee it to heat your home and against defective material and workmanship.

Ask the Dealer or Write Us for Free Book
If there is no dealer near you to demonstrate the Caloric write us. We'll give you a dealer's name and send our illustrated book FREE.

The Monitor Stove and Range Co.
3316 Gest St. Cincinnati, Ohio



Cuts 1200 Yd. 2-Ft. Ditch in One Day

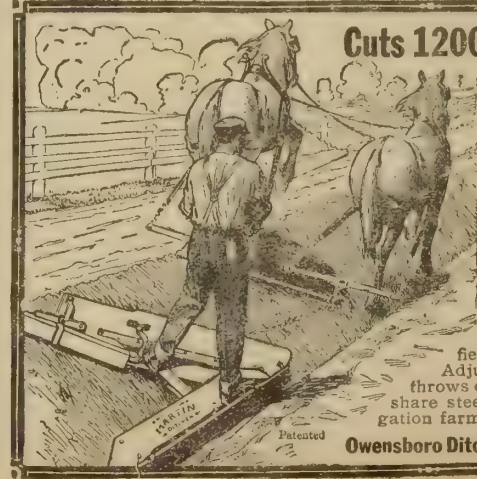
Goes Down to Four Feet if Desired

Does it clean and easy. Levels bumps, fills gullies. Saves money and lots of the hard work in making and cleaning irrigation ditches. Write us and let us tell you more about this machine—

THE Martin Farm Ditcher

Works in Any Soil

Try One 10 Days.—We want to make you a proposition that is absolutely fair. We will ship you a Martin and let you use it 10 days on trial. If not satisfied send it back and get your money. Adjustable for any width cut. Reversible—throws dirt either side. Strongly made of plow-share steel and will last a lifetime. Ideal for irrigation farmers. Write for Book. Address



Owensboro Ditcher and Grader Co., Inc. 724 Evans Block Denver, Colo.

THE WRONG WAY TO BUY A RANGE

Don't go to the store and pick a range. Get full information first on how a range must be built to stay a perfect baker, and to save fuel.

Write today for our Free Booklet which tells you how to judge the baking ability and fuel economy of a range.

Arcadian Malleable Charcoal Iron Range

Built like a locomotive boiler. No bolts to loosen. No stove putty to crumble. No possibility of false drafts to increase fuel bills and spoil baking qualities. The Arcadian never needs blacking. Write at once for Free Book.

ARCADIAN MALLEABLE RANGE CO.
Milwaukee, Wis. Dept. 9

Saves
 $\frac{1}{3}$
Your
Fuel

Your Opportunity

You should investigate this particular bargain if for no other reason than to see how exceptional it is.

50 acres of very fertile land at Elberta, Utah. Raises all crops successfully.

Within short distance of two good mining camps. Good market for all garden truck.

On railroad giving excellent facilities.

Prior water right at \$1.00 per acre if used.

Write us today or see

W. C. ALBERTSON

604 Dooly Bldg.
Salt Lake City, Utah.

HOW TO CUT ROSES

There is a right and a wrong way to cut roses. The choice of the latter may seriously injure the blossom-producing properties of the plants. This applies particularly, of course, to rose plants chosen and grown specially for cut-flower production. Such roses will be largely of the perpetual bloom ing sorts.

When a rose is cut from such plants—tea roses or other perpetual bloomers—only two or three eyes of the current season's growth of that branch should be left on the plant. This should give the roses very long stems. Succeeding blossoms should be cut close to the ground. It will seem like destroying the bush to take so much off it, but if the object is the production of roses, the cutting away of the surplus wood will attain the desired end.

If the spring pruning has not been sufficiently severe the plant is likely to have long, naked stalks and short stems to the flowers. With this char-

acter of growth only one or two strong leaf buds should be left on the branch when the flower is cut, so as to stimulate as much growth as possible from the base of the plant.

The greatest temptation to leave wood is where there are two or more buds on one branch, some being small when the terminal one is open. This temptation to follow a bad practice can be avoided by pinching off all side shoots after a bud has formed on the end of a branch. This prevents the formation of two or more buds on one stalk. This summer pruning will encourage additional blooms on varieties which bloom more than once a year.

FOR PAINTING BUILDINGS

For the benefit of those who may wish to paint their building with different tints or shades, the following suggestions may be helpful:

Red and black make brown.

Lake and white make rose.

Red, blue, and black make olive.

White and brown make chestnut.

White, blue and lake make purple. Blue and lead color make pearl. White and carmine make pink. Indigo and lampblack make silver gray.

White and lampblack make lead color.

Black and Venetian red make chocolate color.

White and green make bright green.

Purple and white make French white.

Light green and black make dark green.

White and green make pea green.

White and emerald green make brilliant green.

Red and yellow make orange.

White and yellow make straw color.

White, blue, and black make pearl gray.

White, lake, and vermilion make flesh color.

Umber, white, and Venetian red make drab.

White, yellow, and Venetian red make cream.

Yellow, white, and a little Venetian red make buff.—Western Farm Life.



The Woman Who Knows

the one perfume which suits her—the exact style of dress which becomes her—the particular type of person she enjoys as a friend:—Such a woman, we are sure, will appreciate the assistance of the "Taste Packet" in deciding just which tea-flavor precisely suits her taste.

Sold
through
grocers
only
In standard
packages,
8-oz. and
1-lb.

This packet contains four parchment envelopes of fine tea—enough for five or six cups each of the four true flavors: Japan, Ceylon, Oolong, English Breakfast. We mail it gladly to any one sending ten cents (stamps & currency).

Address: A Schilling & Company, 333 Second Street
San Francisco, California

Schilling's Tea



TO SEE THE WONDERFUL PRO-
DUCTS OF MILLARD COUNTY
County Fair at Fillmore, Utah, via
Dasis, Utah, September 28, 29, and 30.
Excursion tickets on sale from all
Utah stations, September 27, and 28th.
Tickets good returning October 5th via
Salt Lake Route. adv.

Live Stock

THE MAN WHO

CHEATED HIMSELF

The prevalence of scrub animals in the United States is no credit to the intelligence of those who breed and feed them. After all that has been said about the unprofitableness of keeping low-grade live-stock surely farmers ought to know better. As a matter of fact they do know better, the trouble is they don't do as well as they know.

Every farmer knows that it costs little more to raise a high-class animal than a scrub. Give him his choice and he will pick the thoroughbred work animal in preference to the plug; he will choose the classy, top-notch bull or cow rather than the ribby out-cast without character enough to hold up its head; the blue-ribbon porker to the tribe of runts.

It isn't a lack of information that account for the prevalence of "skates" and "boarders" and "culls." It is a matter of not having the price in most cases for good foundation stock comes high. Sometimes a man will have enough funds to invest in a pure-bred sire, but he is minus the "hunch" that starts him on the right road. It is just possible that such a man fails to realize the difference in earning power between the beast of extra high quality and the cheap substitute.

The strongest arguments on this point are the facts of experience. As Gladstone said: "One example is worth a thousand arguments." The following incident illustrates the adage that "the best is the cheapest."

Five years ago two men went to a breeder of Hereford cattle in the State

of Iowa to buy a bull to head their herds. One man said he could not afford to pay over \$100. The other said he could not afford to use a bull that was not worth more than \$100. The first man got a bull at his price, while the other secured one that suited him for \$250.

Three years later each of these men had young bulls for sale. Those sired by the \$100 animal would not bring any price among reputable breeders and were finally sold to go into the feed lot at \$25 a head. The man who paid \$250 for his herd header sold his entire bull calf crop—seven in number—to the breeder of that same bull for \$125 apiece at weaning time.

The cheap man saved \$150 on the price of a bull, but he lost \$700 on the price of his bull calves for one year. Since the bull is half the herd the man who buys a cheap animal or uses an inferior one for any reason is cheating himself.

It is not uncommon for a young bull to sell for \$500. Even \$2,000 for an extra good one fails to make a big splash in live-stock circles. One show bull brought \$25,000 a few years ago. Such prices are not a handicap to the business of producing thoroughbreds—they are a boost. They are a guarantee to the man who pays fancy figures for a prepotent sire that he also can sell high-class animals for fancy figures.

Aside from the feeling of pride in superior live-stock, it is a matter of straight business. Choice breeding stock always bring good prices while scrubs are invariably unprofitable. In addition to the prices for good breeding stock, well-bred animals make better feeders. They convert hay and grain into meat, milk and wool at a profit, whereas the mongrel eats its

head off and sells at a loss.—Farm and Breeder.

POISONING OF LIVE-STOCK

BY LARKSPUR

The recent experiment conducted by the United States Department of Agriculture indicate that the various species of larkspurs are poisonous to cattle and horses, but not to sheep. Except under unusual circumstances, however, horses do not eat enough of the plant to produce any ill effects. From a practical standpoint, therefore, it may be said that larkspur affects cattle only. It was also found that a quantity of the weed equal to at least 3 per cent of the weight of the animal was necessary to produce

poisoning.

Where larkspur is especially abundant, it is desirable to use the range for sheep rather than for cattle or to combine sheep grazing and cattle grazing in such a manner that the areas infested with larkspur shall be first eaten down by the sheep.

The first evidence that the animal has been poisoned is frequently afforded by its falling down. After a short interval it will probably regain its feet only to fall again. As the effect of the poison wears off, the animal is able to keep its feet for longer and longer periods, and finally walks off very much as if nothing had happened. In severer cases it is ultimately unable to regain its feet at all and dies.

A New Sugar Factory

FOR SANPETE COUNTY

PEOPLE'S SUGAR COMPANY WILL BUILD.

Sanpete County has over 58,000 acres under good irrigation systems—the second County in Utah in irrigated lands.

I will be pleased to give full information about Sanpete County and the People's Sugar Company.

I am devoting all my time to the interests of the Company and advise my friends to become associated, if possible as it is sure to be very profitable.

GEORGE E. BROWNING, Pres.

SEND IN COUPON TODAY

PEOPLE'S SUGAR COMPANY,

712-14 McIntyre Bldg., Salt Lake City.

Please send information regarding Sanpete County and the new Sugar Factory to be built there.

Name

Address

Pleasant View Farm For Sale

Located 2 Miles West of Lehi $\frac{3}{4}$ Miles from Kirkham Station, on Orem Electric Line—An Ideal Location for a Dairy.

240 acres all under irrigation. 80 acres of alfalfa, 6 acres orchard. 9 room pressed brick house modern—barn and outbuildings, plenty of machinery and implements. Six very fine mares, 1 large horse, 1 3-year old stallion, several fine colts 1, 2 and 3 year old. Fine herd of registered Holstein cattle, four young bulls (one ready for service) from heavy producing cows. 6 young cows, 2 2-year old, 4 1-year old and 4 heifer calves. Registered papers furnished. They represent the best families of the breed. One hundred twenty-five hogs. 50 tons of baled hay. Plenty of hay and grain for feed.

This is a splendid opportunity to get a start in fine stock. Come and see the place and the live-stock. Sure to please you. Horses and cattle will be sold single or in a lot.



KORNDYKE HENGVERELD FELDSPAR—No. 144138.

LIBERAL TERMS

Sire, King Korndyke Hengerveld Ormsby 13th 90868.

CHART PEDIGREE
OF THE
PURE BRED
HOLSTEIN-FRIESIAN
Male

Name, KORNDYKE HENGVERELD FELDSPAR—No. 144138.

Born, August 13, 1913.

Dam, Duchess Clothilde Feldspar 171995.

G. Sire, King Korndyke Hengerveld Ormsby 53822.
Sire of 25 ARO daughters and 2 proven sons.

G. Dam, Maple Knoll Consolation 107660.
Milk 197.6 lbs.,
Butter 16.237 lbs.

G. Sire, Caswell Clothilde Duke 63368.
Sire of 1 ARO daughter.

G. Dam, Duchess Feldspar De Kol 2d 72400.
Dam of 1 ARO daughter.

G. G. Sire, Sir Korndyke Hengerveld De Kol 41266.
Sire of 28 ARO daughters and 13 proven sons.

G. G. Dam, Pietertje Maid Ormsby 78051.
Milk 535.4 lbs.,
Butter 35.562 lbs.
Dam of 2 ARO daughters and 2 proven sons.

G. G. Sire, Sir Armyrn De Kol Posch 37128,
Sire of 20 ARO daughters and 3 proven sons.
G. G. Dam, Kirtle S 2d's Consolation 62685.
Dam of 4 ARO daughters.

G. G. Sire, Aaggie Regalia De Kol 50675.
Sire of 1 proven son.
G. G. Dam, Jessie Pauline Paul 70640.
Milk 411.9 lbs.,
Butter 21.055 lbs.
Dam of 1 ARO daughter and 1 proven son.

G. G. Sire, Harry Clothilde Prince 31501.
Sire of 1 ARO daughter.
G. G. Dam, Duchess Feldspar De Kol 63185.

C. H. Roberts, Lehi, Utah

Phone 139-R 3
P. O. Box 449.

SELECT YOUR SEED
POTATOES NOW
C. B. Sprague.

The time to select seed potatoes is now. Go into your potato field before the vines are dead and select the most vigorous, healthy and productive looking vines. Place a stake by the selected hill to mark it for future location. The stakes should be tall enough to be readily seen from a distance but small and light enough to admit a large number being put into a common burlap sack and carried about over the field.

Mark a great many more hills than you think will be needed for when the crop is dug many of the selected hills may not come up to the desired standard.

If the field is to be dug by hand labor, the selected hills can be thrown out by themselves and kept separate from the balance of the crop. Hills that show an extra yield and exceptional smoothness as dug may be saved although not previously marked by a stake. In fields where potato digging machinery is used, a man should work ahead of the digger with a potato digging fork or hook and dig the marked hills, picking up the satisfactory ones and leaving the others to be gathered up with the general crop.

The standard for the selected hill or rather the particular qualities sought after are, greater uniformity in size and shape and a maximum number of merchantable tubers. A hill containing four, six, eight or more good, smooth, even sized potatoes having a plump and strong appearance should be kept. A hill consisting of one large and several irregular knobby potatoes which would make the total weight per hill light, should be discarded from the seed selection. The selection of one good true-to-type potato from a hill where the balance of the tubers are of inferior shape and quality will not pay for the time taken in making selections. It is the product of the whole hill taken as a unit, and measuring up to the desired standard that must be had to keep up the yields of the potato crop and to keep the seed from running out.

In large commercial plantings where many acres of ground are planted every year, the seed selection becomes a big problem and to go over the whole planting would involve a great deal of unnecessary time and expense. Choose enough selected hills from this year's crop to plant

UTILIZE FRUITS

With cold winter days so near, the thoughts of dainty, tasty jellies and delicious jams made right at home are natural. They are cheaper than substitutes—and, oh, so much better. The West's grapes and apples are now available. Utilize them this year—you'll have success by using

Western-made Sugar

a seed field which will raise enough potatoes to plant the whole general acreage for another year. Then select hills from this seed field for selected seed and use the balance of the crop for seed to plant the general crop for another year.

The seed field should be located on the best ground and taken as good or better care of than the general crop. The size of seed field and number of hills to be selected will need to be determined by the general acreage to be planted the following year and also the yield for the particular section. It will always be found economical to plan on raising more seed than really is needed so as to guard against having to finish the general acreage planting with the culls from the marketable lot.

Keep selected seed separate. Use some system of labeling or record by which it is readily known. It is not well to trust to memory alone to determine the separate lots at the planting time. Store in the most favorable place, and by continuing the above line of work every year an excellent strain of potatoes can soon be secured.

ABOUT SUGAR BEET SEED

An increase of \$10,000 has been granted in the Agricultural Appropriation Act of 1917, for aiding in the development and improvement of American strains of sugar beet seed, and especially for the establishment of a permanent sugar beet seed industry in the United States. The beet sugar industry in the U. S. has assumed great proportions, in spite of the fact that we have had to look to Europe mainly for our beet seed. The production of sugar beet seed is a new but important industry in the U. S. and one that has received added importance due to the shortage in sugar-beet seed resulting from the European war.

Most of the work done in the United States in the breeding of sugar beet seed has been done by the United States Department of Agriculture, the Experiment Station of the Utah Agricultural College, and the North Dakota Experiment Station. The Utah Station has gone beyond the work of breeding the seed and has demonstrated that it can be produced in quantities for commercial purposes.

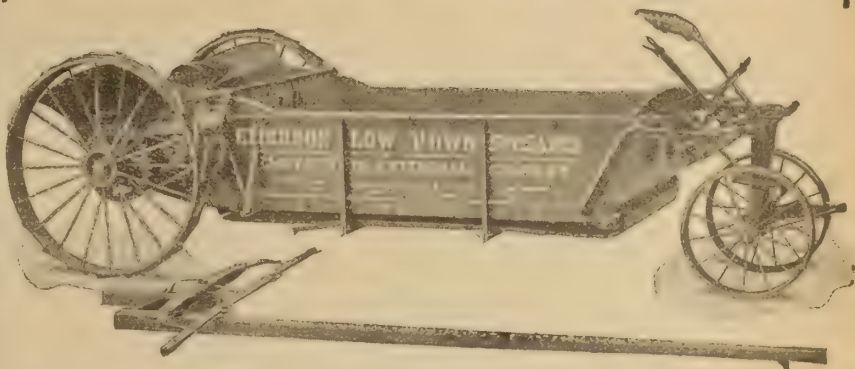
In 1902, at the same time that the United States Government began the study of sugar beet seed, the Utah Station took up the work. After countless experiments and tests, covering nine years, they were able to announce that they had bred up a strain of sugar beet seed superior to any of the European strains in productivity and sugar content of the resulting crop. This statement was corroborated by several sugar companies who found that greater yield per acre of beets with higher sugar content resulted from using Utah seed.

In 1911, when a superior strain of seed had been secured, the problem was to produce the seed in commercial quantities. Since then the Station has been working upon this problem and it has now been demonstrated that a superior sugar beet seed can be produced in quantities sufficient to supply the demand of the factories of this country.

In this work, the Utah Agricultural College has been working in conjunction with several sugar companies. The results obtained by the College experts upon an experimental scale, have all been corroborated by these companies in a large way.

As a result of the work done by

Emerson Low Down Spreader



Built in 50 and 70 Bushel Sizes

The Emerson Low Down Spreader is equipped with an all metal beater of sufficient weight and strength to carry it through the materials it has to shred and pulverize. We emphasize the fact that the Emerson is the strongest Spreader made. The main frame and all other parts except the sides and apron slides are of steel. The main frame is steel trussed and braced, the cross rods keep the frame perfectly square and true. Large heavy steel sills add both strength and long life to the Spreader. The Emerson Spreader is furnished with or without the wide spread attachment, which when used will make an even spread on the ground to fully six inches outside the drive wheels.

Write us for catalog.

MILLER-CAHOON COMPANY

Murray, Utah Idaho Falls, Idaho

VISIT THE EAST
AND
YOUR OLD HOME TOWN
"Home Visitors" Excursions

VIA SALT LAKE ROUTE

To
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RETURN LIMIT 3 MONTHS

For rates, time tables and full particulars see Agent Salt Lake Route or write

J. H. MANDERFIELD A. G. P. A.
Salt Lake City, Utah.

Utah, several companies in other western states have been lead to experiment in the production of sugar beet seed. Graduates of the Utah Agricultural College have been in great demand in this regard. The great Western Sugar Company has secured the services of LeRoy Wilson and Howard Brossard as field men, while the United States Sugar Beet Company of Idaho has secured the

services of Earl Jones and Axel Christensen.



VIOLINS

Mandolins, Guitars and all other string instruments. Mention this magazine and ask for catalog and 6-day trial offer.

Daynes-Beebe Music Co. SALT LAKE

AGRICULTURAL AGENCIES (Continued on page 7)

an office man with his ear to the telephone to answer appeals for help. In some places the bankers expect him to give them advice about farm loans, or local merchants or mail order houses look to him to turn business their way. In other cases he is thought to be under obligation to fill much space every week in the local papers. There are some evidences that politicians would like to have him act as their agent. Recently a candidate for a State office figured out that by using the extension organization each county agent could deliver to him 1000 to 1500 votes. In this multiplicity of legitimate and illegitimate demands we cannot have satisfactory and efficient county agents unless they are held strictly to educational work. They must be primarily and strictly teachers of practical truth and organizers of the farming people to receive and practice such truth taught to them through demonstrational methods.

To introduce and support the county agent it is very important to have in each county a voluntary organization thoroughly representative of the farming people and interests. Hence we have county organizations under various names but in a number of States called "farm bureaus." These organizations stand for local initiative, counsel and co-operation. They should have such an organization that they can themselves carry on such activities as may seem best to the farm bureau. The co-operative employment of a county agent may be only one of these activities. That is, this is their contribution to the educational system commonly known as extension work. They should not expect the county agent to act as their business manager and he is not at liberty to act in this capacity under the terms of his co-operative employment. The officers and committees of the farm bureau should have plenty of duties in the discharge of which they and not the county agent are to be active and responsible.

Under the arrangement for the employment of the county agent which involves co-operation with the State agricultural colleges and the United States Department of Agriculture the farm bureau is one of three partners. The qualifications, duties and efficiency of the county agent are therefore to

be determined by the partners jointly and not by any one of them alone. In actual practice it must also be kept in mind that the county agent is employed with the understanding that he is a part of the co-operative agricultural extension system established by the Smith-Lever Extension Act and that therefore the Department and the College can only enter into an arrangement by which the functions of the county agent are limited to those which are proper under the terms of that Act.

The things which are vital to satisfactory relationships between the various public agencies for agricultural advancement as described above are (1) Clear definition and differentiation of the functions of each agency as far as this can be done in statutes, administrative regulations and (2) the cultivation and practice of the co-operative spirit and method. If the functions of the various agencies are clearly set forth in the legislation regarding them the "twilight zone" between them will be reduced to a minimum. This in itself will promote harmony. The few things in which their work may overlap will give little occasion for friction and all misunderstanding may be easily removed by mutual agreements covering this small territory.

But the best results can only be obtained by a large measure of co-operation. This may be promoted by definite provision for it in the laws. The cultivation of the co-operative spirit is one of the most important duties of the men and women of our time. Certainly the friends of agricultural progress have every incentive to move and work in this direction. It is interesting to note that in the midst of the world-wide disturbances growing out of the present war the International Institute of Agriculture at Rome, representing the co-operative effort of over fifty countries, is continuing its work.

The co-operative problems under consideration in this meeting are only a part of the great fundamental problem of the twentieth century. The world is filling up with people. Whether we will or not we have to rub elbows in the crowd. It is therefore our business to find out how we can preserve the proper initiative, freedom and activity of the individual person or organization and at the same time get the greatest efficiency and good through collective action.

In some way the individual must be able to move easily through the crowd on errands of his own and when occasion demands join with the rest of the crowd in mass action which will bring the best results. The man who is willing to keep his arms down when moving among his fellows and to lock them with those of his neighbors when they need his help in a good cause is the man who will advance agriculture or any other form of civilized activity in this and future generations.

TWO BIG EVENTS

Utah State Fair and Fall Conference
L. D. S. Salt Lake City, Sept. 30th to
Oct. 8th, 1916.

Low excursion rates via Salt Lake Route on sale Nephi and Tintic, and North September 30th to October 8th, inc. Good returning October 12th. All other points on sale September 29th to October 7th, inc. Good returning until October 15th. Extra sleepers and day coaches for this occasion.

Money to Loan On Farms

LIBERAL TERMS

If you need money for additional improvements to buy livestock or any other purpose let us help you.

Because of our long experience in the land business, we are prepared to give you the best service and protection.

Come and see us or write.

Kimball & Richards

"Land Merchants"

The firm that is known
for the "liberal loan."

56 and 58 Main Street
Salt Lake City, Utah.

Sunday

and

Week-End Excursions

Via

Oregon Short Line



Travel More
At Slight Cost.

Half Fare
Sundays—
Slightly More
Saturdays to
Mondays.

EACH WEEK

BETWEEN LOCAL POINTS.

This innovation has been established for the purpose of permitting residents in local O. S. L. territory to visit back and forth Sundays and during week ends.

Saturdays to Mondays—

—To encourage baseball games and other sports between different towns.

—To make possible inexpensive outing and fishing trips, and generally to make it possible for our patrons to "get about."

Ask any Oregon Short Line agent for further details, or write,

D. S. Spencer, General Passenger Agent,
Salt Lake City, Utah.

GREEN CONCRETE MIXERS

No matter how small the job all concrete should be thoroughly mixed.

The old method of shoveling is tiresome from a physical standpoint and is very unsatisfactory for consistent mixing.

Our foot, steam or gasoline power mixers will solve the problem for you.

Made in several sizes and endorsed by all who have used them. Made in Utah.

Write for information and bulletins.
GREEN MACHINERY and MFG. CO.
American Building 338 So. Main St.
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Salt Lake City, Utah.



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Mention Utah Farmer when you write

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For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

Gem Herd of Improved Chester White Swine

This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions of the World's Fair held at Frisco this last year. Both Sire and Dam, still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale all times.

Address

GEO. H. LAWSHE
Idaho Falls City

Cantaloupes \$1.00 Case f. o. b.
Airedale Puppies \$5.00 to \$15.00.

BATES & SONS
Provo, R. F. D. No. 1.

FARM FOR SALE—125 acre farm, 100 acres good beet land with 116 shares in Bear River canal, all fenced with hog tight wire into seven fields; eleven room frame house equipped with electric lights and water, good barn and sheds. Located 1/2 mile west of Corinne on gravel highway. Terms. This land will be all tiled by Nov. 1st. Enquire of W. T. Davis, State Bank of Brigham City or W. L. Boswell on the premises

Send in your orders for Butter rappers to The Utah Farmer.

FOR SALE

Two registered Clydesdale mares, three and four years old. One team of draft horses; one driving mare. Call Andrew Knudsen, Supt. Utah County Infirmary, Provo, Utah.

UTAH HATCHED WHITE LEGHORN BABY CHICKS \$11.00 PER 100

Circulars, order-blanks, etc., upon request. Candee Colony Brooders carried in stock.

GLENWOOD EGG FARM
R. D. 3 Murray, Utah

DRY-FARM FOR SALE

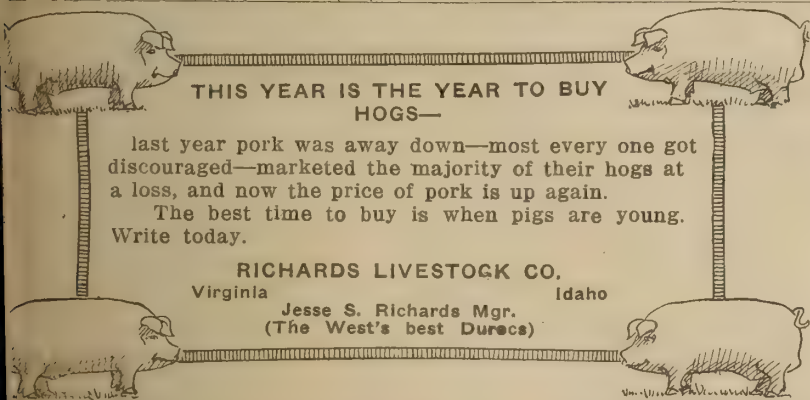
320 acres in Southern Idaho, 170 broken, 100 in wheat, all fenced, good barn and small lumber house. Address J. F. S. Care of Utah Farmer, Lehi, Utah.

FOR SALE

205 acres unimproved on Green River and San Rafael 18 miles below town. Altitude 3980, part can be irrigated by gravity, plenty of water and timber and open range where stock graze winter and summer. Fine Soda spring on land. Ideal for home and ranch.

M. OPPENHEIMER
Elgin Utah

FOR SALE—Prize winner, pronounced by judge at Provo Stock show the best by far Jersey bull shown under 1 year. Age now 7 months. Inquire of owner, J. W. Gessford, 33 East Center street. Phone 341-R.



THIS YEAR IS THE YEAR TO BUY HOGS—

last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again. The best time to buy is when pigs are young. Write today.

RICHARDS LIVESTOCK CO.
Virginia Idaho
Jesse S. Richards Mgr.
(The West's best Durecs)

BALLAMOAR FARMS

has for sale

AN ATTRACTIVE FOUNDATION HERD OF REGISTERED JERSEYS
9 Cows and a Bull

Rapid natural increase causing overstock makes a sale necessary.

The Bull—GUENON'S CHAMPION BELMONT—is 11 months old, thrifty, has straight lines and good capacity, and will make a show animal. His dam has a 500 lb. R. of M. record. His sire is Belmont's Champion Lad, the sire of many prize winners. Two of his daughters have produced over 600 lbs. of butter in a year.

The cows are not culls but are richly bred and of good dairy type. They all have daily records of milk production.

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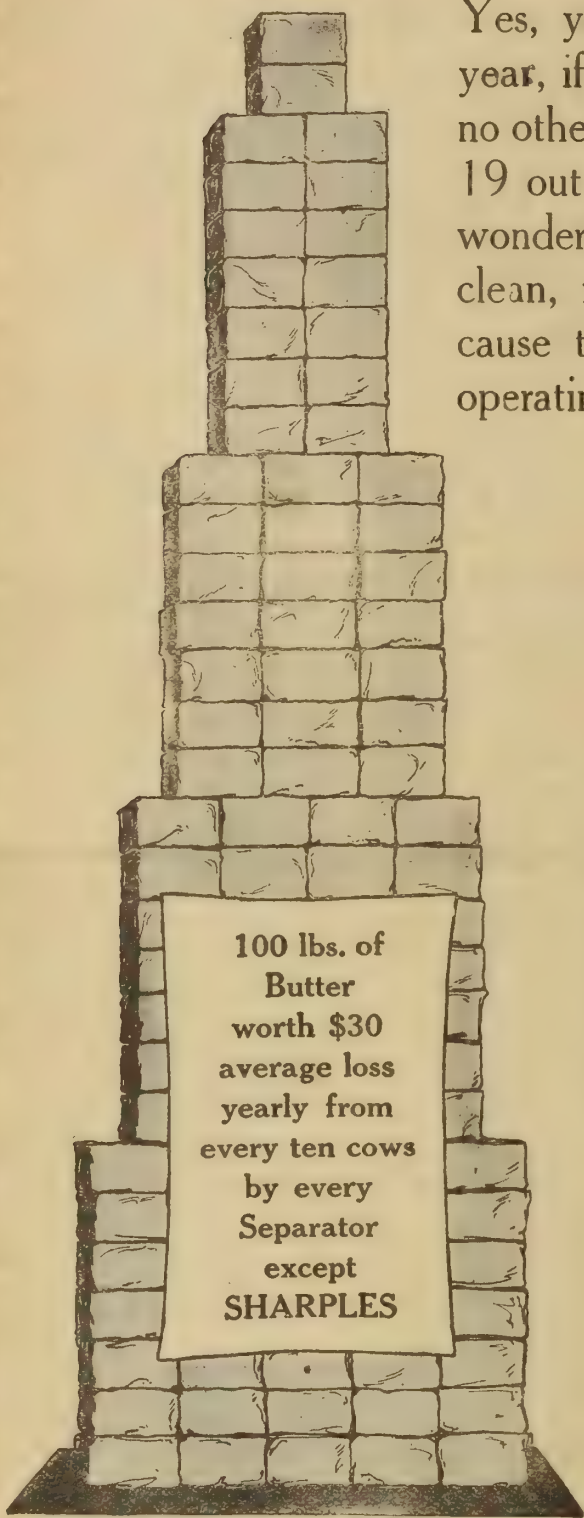
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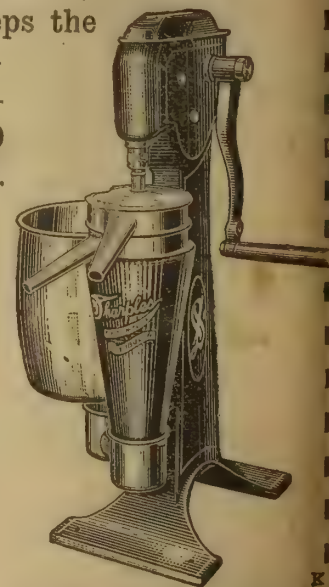
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VOLUME XII; No. 10

LEHI AND SALT LAKE CITY, UTAH

OCTOBER 7, 1916



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The soil is a rich sandy loam, which in its natural state is covered with a heavy growth of black sage. This type of soil has been proven to be equal of any in the world for fertility.

This Man Knows

J. A. Fitts, who has successfully farmed near Downey for six years, says, "Any man who will work on his farm in this valley is bound to succeed. There is no better land, no better railroad, no better water, both for domestic use and for irrigating, in the country. The soil is rich and the climate almost ideal. Potatoes will bring over \$100 per acre and from 40 to 50 bushels of wheat to the acre is a common crop. Last year I raised 35 car loads of fine potatoes on 100 acres of virgin land, or about 250 bushels per acre. There is no better farming country anywhere in America than the irrigated lands near Downey."

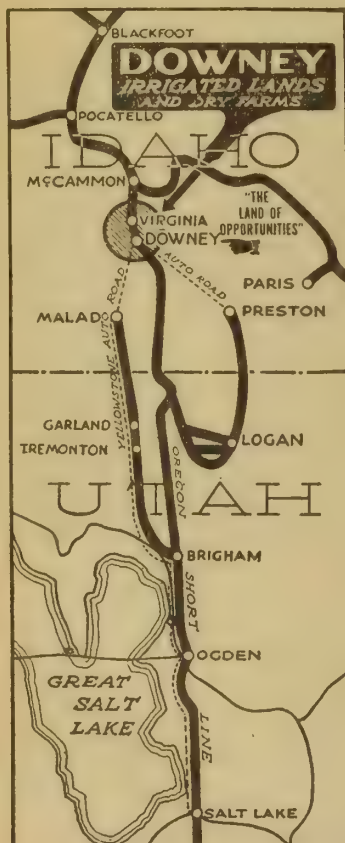
Climate

The climate is similar to that of Cache Valley, which immediately adjoins Marsh Valley on the south. There are no extremes of temperature.

Markets

Stock, grain and produce are shipped to Utah, Montana and Pacific Coast points. The local demand is greater than the supply. There are no better markets any place in the country than those tributary to Downey.

Study this Map



Irrigating Water

An abundance of irrigating water is furnished through the big canal from the fine modern reservoir on the Portneuf river. The main canal is 30 feet wide, 4½ feet deep and 26 miles long.

Culinary Water

The culinary water, found at a depth of 10 to 35 feet from the surface, is of a very superior quality and in great abundance.

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A sugar factory will soon be built near Downey. By getting in TODAY you will be buying at "ground floor" prices. The Downey and Marsh Valley country is growing rapidly. Prices will never be so low again.

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including a full water supply from the big Canal system, is the average price of the best irrigated farming lands. Most of the farms are in 40-acre units. In the main they are fully developed farms with alfalfa, grain and garden products now growing.

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The Value of Cow Testing Associations

Does the average man who is milking several cows need the service of a cow testing association? The best answer that can be given is by the men who are members of these organizations, and in nearly every case will the answer be, "Yes he does need the service of a cow tester."

Systematic records should be kept so one can know how much milk they are getting and what it is costing to produce it? Are you feeding the most economical ration?

Members of a cow testing associations usually get better acquainted and discuss many problems that help one another. The tester is able, by his experience with all the other members, to help each individual member.

The testing is done right on the farm so that the farmer may derive every benefit possible from the work. At the end of the month the amount of food eaten is charged to the cow, the value of the butter fat produced is credited to her, and from these figures the net profit per month of each cow is determined. In this way the "boarder cow" may be eliminated and by selection from the best individuals the standard of the herd is soon built up to a higher scale.

Every cow making forty pounds of butter-fat or more in one month is placed on the "Honor Roll." During the month of September 18 cows attained this distinction, they are as follows:

Owner	Name of Cow	Breed	Pounds Milk	% Fat	Pounds Butter-fat
D. T. Stuart	Brown Jersey	Jersey	1348	4.6	62.0
L. W. Hall	No. 12	Shorthorn & Holstein	1684	3.8	60.2
F. W. Price	Rog	Shorthorn	1224	4.8	58.8
T. W. Hall	Wyett	Jersey	786	6.4	50.4
T. W. Hall	Spot T. G.	Jersey & Shorthorn	1026	4.9	50.3
Dave Nelson	Lil	Holstein	1188	3.9	46.3
Darley	Pet	Jersey	855	5.5	46.0
J. Perkins	Daisy	Sh. & Holstein	1090	4.1	44.8
J. L. Green	Nig	Jersey	1162	4.0	44.6
J. Darley	Tiny	Jersey	870	5.1	44.4
T. W. Hall	Blackie T. W.	Holstein	1134	3.9	44.2
J. Darley	Bud 2d	Jersey	1035	4.2	43.5
T. W. Hall	Yellow	Jersey	1116	3.8	42.4
J. Darley	Blackie	Jersey	1026	4.1	42.1
J. Perkins	Rose	Jersey & Sh.	864	4.8	41.5
F. W. Hall	Speck	Shorthorn	954	4.2	40.1
Wm. Darley	Wart	Jersey	1026	3.6	40.0
J. A. Leishman	Pink	Shorthorn	1332	3.0	40.0

(Continued on page 7)

The cost is so small, being about .25 to \$1.50 per cow for the year's work. There should be about 600 cows in order to form an association and within a radius of 10 or 12 miles.

Utah should have several of these organizations; for some reason we have been backward about it.

The Wellsville Cow Testing Association, the only organization of its kind in the state has just completed its first months work and already the members of the Association have realized to a large extent the importance of this work.

The Association was organized last August by Mr. J. E. Dorman and Mr. E. Meyer of the Office of Western Dairy Division, and Representatives of the U. A. C. Extension division. It is composed of forty-four members with a present total of 483 cows. Each month the various farms are visited and the milk of each cow is weighed and tested to ascertain the butter-fat production of each cow for the month. The tester stays at the different farms where he is testing and at night various problems such as feeding, handling, housing, breeding, and the care of the cow is discussed with the farm-

Quarter-Million Acres Can Be Reclaimed

At the present time many of our farmers are interested in the question of drainage. This problem of drainage is not confined to any one section of the state, for this reason the following interview with Mr. H. A. Hart Senior Drainage Engineer for the United States Department of Agriculture will interest many of our readers.

How many acres of land are susceptible to reclamation by drainage in Utah?

"The drainage of irrigated land has become an important economic problem in Utah. Not less than a quarter of a million acres of land are susceptible to reclamation by drainage in this state. The present condition of such lands ranges all the way from wet pastures that support only a fraction of a cow to the acre down to lands that are absolutely unproductive and practically worthless. A high water table is the fundamental reason for the present condition and the effect of this is shown by a waterlogged soil or by accumulations of salts or both. The basis of reclamation in any event must be underdrainage."

Where is this land located that should be drained?

"Lands in need of drainage may be found in every portion of the state. No valley is immune to the difficulties arising from the artificial application of water to arid soils. On the older tracts the proportion of injured land is higher but even the latest developed projects have their problems. All types of soil are susceptible to injury

by seepage and salt accumulation. Sandy and gravelly subsoils are more often a cause of difficulty than an insurance against it. Neither is relative location in a valley a certain safeguard. River bottom land, areas adjacent to lakes, land at the foot of benches, land on the slope of benches and even land on the tops of benches present problems in drainage reclamation."

"The tracts under consideration are nearly always the cream of their respective sections. As a rule they were the first lands taken up owing to the ease with which irrigation water could be brought to them. They have received many improvements. They are near the settlements with the resulting social advantages. Markets are close at hand. Transportation facilities are good. The improved highways are within easy reach. Taken all in all, their reclamation by drainage represents a better investment than the reclamation of new areas by irrigation."

Is it profitable to drain these lands? "The restoration of such lands is feasible and economical at any time but owing to the present demand for the products of the farm and the consequent higher market value of good lands, it has become an economic necessity that these areas be reclaimed."

How do you know that the draining of these lands can be done?

"The United States Department of Agriculture and the Utah Agricultural Experiment Station have conducted experiments and made demonstrations over a number of years and it has been shown conclusively that all such lands may be brought back to as high, and in many instances a higher, state of productiveness as they have ever known. On the other hand these investigations have demonstrated that ordinary drainage methods such as are employed in the humid section of the country are of little or no avail in the drainage of irrigated lands. Special methods have had to be developed, special devices and machinery have been brought out and an entirely different drainage practice has been inaugurated."

Is the problem of draining irrigated lands similar to that of other sections?

"The drainage of irrigated lands is a highly scientific matter and an extensive knowledge of underground conditions, often to a depth of many feet, must be had before a successful drainage system can be designed. Haphazard methods are sure to result in failure. Nature has determined the proper location and depth of drains and unless her indications are followed success cannot be hoped for."

(Continued on page 15)



Gamboge's Vellum Majesty, a Typical Jersey Bull.
It always pays to keep a good pure-bred sire.

DAIRYING

WINTERING DAIRYING

Some years ago winter dairying was not a very big question in this country. Of late years, however, with the better barn equipment, the erection of silos and better care of dairy cattle in general, a large number of dairy farmers have found the many advantages in the production of dairy products in winter.

One way in which the profits of the dairy are increased is in the fact that a cow which freshens in the fall will give a full flow of milk for a longer period than the cow which calves in the spring. The cow that comes fresh in the spring will milk heavily until along the first of July, when the flies, heat, and it may be a dried up pasture, will effectually reduce the quantity of milk. The cow that is fresh in the fall will produce a good flow of milk all winter, and in the spring when the flow of milk tends to diminish she is turned out to good pasture and will increase her milk yield for at least a couple of months more. During the hot, dry months when everything is against the dairy cow doing her best, she is dry or almost so. Thus we see that, at a rough guess, a cow may be easily counted on to give from 15 to 20 per cent more milk and butter fat during the year when she freshens in the fall.

Another inducement to winter dairy-

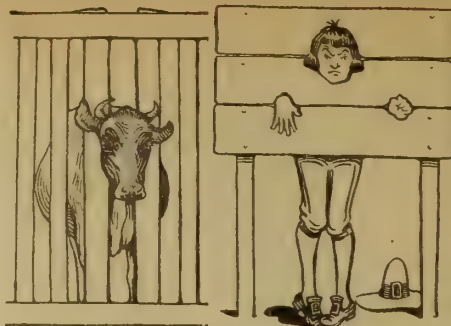
ing is the much higher price which dairy products command during the winter months. The price generally rises as the weather becomes cooler in the fall and remains up until the warm weather of spring. There is not the same amount of care required to keep the milk and cream in good condition, due to the low temperature, and so less loss through poor cream and butter.

Winter dairying brings the milking in that part of the year which is the idle season on the farm. Labor is cheaper in the winter months than in summer and the care of the cows gives employment to the hired help. It helps to solve the problem of hiring a man by the year which is the best way to get efficient help. Cows freshening in the spring bring the milking on just in the busiest season on the farm and so much to be looked after that the cows do not get as good care and attention as they do in the winter after freshening in the fall.

Another question to be considered is the calves. If the fall-born calves are properly cared for they should make much better growth during their first year than the calves that come in the spring. The weather is cool for the fall calf, there are no flies to trouble it, it is not as subject to scours as the spring calf, and with good feeding and care it will go through the winter in fine shape and can be put out to good pasture in the spring and will continue its growth. It will be better able to withstand the heat and flies in midsummer than the spring calf. It is, however, quite essential that the fall calves be given comfortable quarters during the winter. Their quarters must be kept dry and clean, for if they are allowed to get damp and foul the calves will cease to thrive.

It requires just as much labor to look after a dairy cow during the winter whether she is giving milk or not, with the exception of milking and caring for the calves. Of course it doesn't take as long to milk a cow giving a small flow as one giving a large flow of milk but as far as feeding, watering and stabling are concerned the work is the same. So anyone will easily see that it is much better to expend his labor on cows producing a heavy flow of milk than on cows giving little milk or none at all. At least half of the cows of every dairy herd in this country should freshen in the fall. I mean the herds on farms where there are silos. If I did not have a silo I would not attempt to do much dairying in the winter.

September and October are the months in which to have the cows freshen. Just as soon as it is found that they are not getting plenty to eat in the pastures they should be brought to the barn and winter feeding commenced. Some make a mistake in waiting too long before taking their cows off the pastures. I have known some to compel their cows to remain in the pastures long after the frost had killed the grass. Cows always pay much better when they begin to receive their winter ration early. Do not compel them to take a cold rain, for it will certainly cause them to decrease in milk flow. Have a comfortable place in which to do the milking. With a warm, dry barn for both cows and calves during the late fall and winter, winter dairying can be made



Equally Comfortable.

pay for the equipment through the increased milk yield.

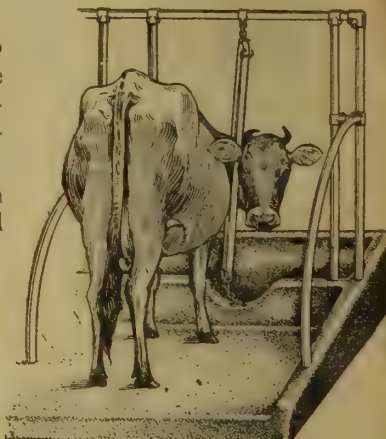
If a cow must use her energy in trying to be comfortable you can't expect her to have much time for milk production—it's a physical impossibility.

A Louden Swinging Steel Stanchion permits the cow to lie down comfortably at the side of her stall, and rise without straining or injuring herself.

More detailed information will be found in booklet 2 and 3. Shall we send them?

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much more profitable than summer
dairying.—J. S. U.

DEVELOPING THE MILK GLANDS W. H. Underwood.

The milk gland is that organ which separates the milk from the blood. In normal circumstances we find four of these glands in the cow's udder. When we examine the udder of a cow that has been butchered we will find that the udder is first divided into two parts in a lengthwise direction, but further that these two parts are each divided again in across direction into two parts. The whole udder is therefore divided into four absolutely separate parts or glands.

The milk glands of a new-born calf are in the bull calf as well as in the heifer calf in an undeveloped state and they remain in this state until time of maturity. That is at about the age of one and a half years. At this age they begin to develop in the heifer calf, whereas they stay at the same stage in the bull calf. It sometimes occurs with the he goat that the glands keep on developing, and literature tells us of he goats giving one pound of milk a day. As I stated, at an age of one and a half years, about the time of the first heat period of the heifer calf, the development of the milk glands begins. This development goes on very rapidly as soon as the heifer calf has been bred, and when the first calf comes the milk glands have reached already a certain stage of development, which stage, however, can be considerably further developed by men if they know how to act in time.

As soon as the first calf is born stimulate the milk glands of the calf's mother. The best stimulation will be obtained by having the calf suck the

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young mother during the first ten or fourteen days and milking the cow twice a day. After the calf is weaned the cow should be milked three times a day for about a week and afterward twice a day. If there is no opportunity to have the young cow sucked by her calf, milk her the first week six times a day and gradually decrease to twice. The same rule has to be applied with cows that have had more calves, however, it will do to have the cow sucked by the calf a week and milked at the same time, of course.

The cow has four milk glands and their canals for conveyance of the milk are the four teats. These four glands should be developed in an equal manner. To do this the milker should milk both front teats and afterward both hind teats and not cross or milk one teat at a time, as is usually done. No matter if one of the teats is earlier emptied than the other, the milker should continue pulling the empty teat at the same time. The milking should be done with the full hand and the teat wet with water, milk foam or greased with a little vaseline. Dry-hand milking is not in accordance with nature; the calf does not suck with a dry mouth. If the milker will push the udder down after the milk flow has stopped, he will see that this massage gives him new milk. This all has to be done, especially during the first time after calving.

I give here two cases of what we obtained on our farm where we practiced these methods for many years. A cow, with her first calf, gave, by milking three times a day on an average during twelve days after calving, 12.8 pounds a day, after having been milked six times a day during the next twelve days she gave on an average 22.4 pounds a day, which amount she kept for a long while after being milked twice a day, when the amount even went higher.

The milk of a cow with unequal development of the milk glands or quarter was weighed during thirty consecutive days. She gave during that month from her badly developed quarter 120 pounds of milk, whereas from her developed quarter she gave in the same time 182.5 pounds. That makes a difference of about 400 pounds during the milking period of such a cow.

For the good of the milk flow a cow should be dry one and a half to two months, and she must be well fed during the resting period. If one neglects to do this he cannot expect the full milk yield of his cows the next milking period. A cow should not be bred before three or four months after she has dropped her calf.

VALUE OF SILAGE

Farm hands are busy at the Utah Agricultural College, filling the College silos with corn silage. Important always as a feed for stock cows, the high price of hay this year has made silage even more valuable to stock raisers. The last few years have seen many silos built throughout Utah, but the movement is still in its infancy.

For wintering the entire breeding herd there is no roughage that is better than silage. All the animals will relish a ration containing it, and it will create an appetite for other feeds. Cows that are fed on all the silage they will consume, along with good hay, will go through the winter in fine shape and make gains. Some dry, coarse fodder or straw should always be kept before animals getting silage, as it reduces the amount of silage to

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be consumed and keeps the bowels from getting too loose. The succulent feed will cause the breeding cows to give a good flow of milk, even though the calf be born in mid-winter, and a thrifty calf will result. If the silage is free from moldy or rotten spots there is no danger in feeding it to breeding cows.

Silage is especially good for calves that have just been weaned. They take to this ration quicker than to dry feed and there is usually little loss due to weaning. The silage should be supplemented with good cowpea, clover or alfalfa hay, and the calves should have a small amount of grain. A mixture of one-half corn chops and one-half cottonseed or peanut meal is excellent.

KEEP BLACKLEG OUT

In the fall a large number of cattle are taken from the range and placed upon succulent lowland pastures. This change of feed induces blackleg, ac-

cording to Dr. H. J. Frederick, veterinarian at the Utah Agricultural College. Blackleg is a disease affecting young cattle, due to a germ that propagates in the soils of pasture land. When an animal dies of this disease, and the body is not removed, the germs get into the soil and multiply. A healthy animal pasturing on the same land is in extreme danger of infection.

To prevent the spread of this disease Dr. Frederick advises that all young cattle, from 6 months to two years old, be vaccinated. For vaccination blackleg vaccine is recommended. This may be obtained locally or from the government, where no charge is made. It is absolutely useless to vaccinate with salt peter or tobacco. Good wishes are as effective in preventing the disease. If a community would practice vaccination with blackleg vaccine consistently for a period of from four to five years, blackleg would be unheard of in that district, unless it was imported.



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A man hates to own up that he isn't as smart as a hen; but he's got to allow that a hen can sit on an egg and not get mad.

We are open to conviction, but the man never lived that could convince us. We are all right—other folks are wrong. The trouble is we are not willing to do what we want the other fellow to do. Think this over.

The farmer has the reputation of being an easy mark for the "wild cat" stock selling agent, bunco artists and other swindlers, but one would think that the city man, the well-to-do fellow, is also apt to be caught in the game. The arrest of 60 blackmailers, many of whom are women, has revealed the fact that about one million dollars has been secured during their operations.

Plenty of good water for domestic purposes is a big asset for any farm. The old time well should make way for modern ones. Whether dug or driven, protect your water supply from unsanitary conditions. A small investment in modern machinery will provide a permanent supply of water, and it is one of the best investments you can make on the farm.

FIRE PREVENTION DAY

We call our readers attention to the proclamation of Governor Wm. Spry setting apart October 9th as Fire Prevention Day. In this issue is an

article giving some suggestions about fire prevention.

Possibly there is no class of people who are as unprotected from fire as the farmers. Lack of equipment, distance from help when a fire occurs, and other reasons might be given why the farmers should take every precaution to prevent a fire. Think it over, and see if it is not worth while, to protect your property and prevent a fire occurring on your farm.

SELECT SEEDS NOW

At harvest time is when you should select many of the farm seeds, and it pays to spend the time in doing this work. We have in mind a young man who was raising some potatoes each year, producing about one hundred and twenty-five bushels per acre. He decided to select his seed. He made hill selections of the best kind, true to type and largest number to the hill. To make it a short story—he is now getting four and five hundred bushels per acre. Did it pay him to spend the time necessary in making the hill selections? The increased yield answers the question. What is true with potatoes, is also true with corn, wheat, oats and many others. In making your selection, remember that "like will beget like." Better seeds will produce a better crop. Poor seed should never be used.

CANNING TOMATOES

In the canning business today, the tomato is one of the most important. It is a native of South America. Once thought to be poisonous and called "apples of love." It is now one of our valuable articles of food.

Utah is becoming known for the excellent quality of canned goods, and today we have many factories "canning tomatoes," the greater part of which will be shipped out of the state.

These factories are furnishing the farmers a market for their tomato crop, and provide work for a great many during the picking season.

Modern machinery and sanitary methods have all helped to popularize the use of tomatoes as a food in the larger cities.

Catsups and other by-products are helping to make canning more profitable.

The canning of tomatoes should be encouraged, as the factory is usually a help to any community that has one.

FARMERS SHOULD WRITE

We were asked the other day why is it that so few farmers write for your paper? We were unable to give a satisfactory answer. We have asked many times to have our readers write for the paper, but only a few have responded.

We want you to write for the Utah Farmer. Tell us of your experiences in farming, give us your ideas on this or that subject. We want our readers to know that the columns of this paper are open to them, and we would like to have you use them.

Don't be afraid of writing, just express your thoughts. Use only one side of the paper, any kind of paper will do.

We would like to have your opinions on the important subjects of the day, such as taxation, rural credits, commissioners of agriculture, and anything else that affects the farmer or his family on the farm or in their home.

Again we invite our readers to write for the Utah Farmer. Take a little time and put some of your thoughts and experiences on paper and send them to us.

SILOS IN UTAH

Supposing some one was to offer you a hundred tons of ensilage, at a cost of \$3.00 or \$3.50 per ton. Would you buy it? At the present price of hay, you could well afford to buy it. One man said, the other day, that a silo would pay for itself this winter, and he is about right. If the price of alfalfa is to remain anywhere near present prices, the silo must come, or we will have to find some other kind of feed for our cattle.

Many silos were built in Utah last year; many more were built this year. This should emphasize the value of the silo, for some who built a silo a year ago secured such satisfactory results, that they built another this year. Corn can be produced here of good quality, and with a big tonage per acre. The silo is a proved asset to any farm, where livestock is kept. Utah will build many more silos next year.

ONE THING WE ARE TRYING TO DO

We have said considerable in the columns of the Utah Farmer about advertising. We know what a force it is in the commercial world, in helping to build up a business. Increased sales means that a product can, or should, be sold at a less price or better value given.

Advertising benefits our subscribers, it also helps our merchants. We try to appreciate the confidence our readers have in us, and we make it a point to run only such advertisements as will give our readers a square deal.

Money is hard enough to secure, and any help that will give our readers a better way of spending it, is part of our plan.

We realize what a wonderful power there is in the great number of readers of the Utah Farmer. We seek your co-operation for our advertisers, for without them, we could not publish our paper. Look over the columns of this issue, and when you buy, ask for the goods that are advertised in the Utah Farmer.

In nearly every case advertised goods are the best, the most reliable, because the manufacturer is behind them, he places his name on them. His way of advertising increases his sales, and you get the greatest value for your money.

DID IT COME TO YOU

We mailed several hundred letters the last few days to our subscribers, making a very liberal offer, if they would renew at once. We try to appreciate the good will and loyalty of our subscribers, for we have thousands of friends among the farmers of Utah and Southern Idaho. We want you to continue with us, for we have many good things planned for the coming winter that will be of interest and help to every reader. We are spending both time and money to solve the local problems—we want to help you. Now you can help us help you by telling us what you want printed and asking us questions.

Our home department will receive more attention, and experts will give us the benefit of their study and experience.

We have been compelled to print part of our papers on poorer quality than usual but this will be changed just as soon as a large shipment reaches us, which was ordered several months ago.

Give the letter we sent you careful attention. We are anxious to see just how many will send their reply within the next few days. We are working for better homes, more profitable and successful farming. We want you with us.

Send for NEW CATALOG Well Drilling Machines

Have a Business
Owners of "AMERICAN" Well Drilling and Prospecting Machines make large profits either as a regular business or a side line. The demand for wells is large, and from our extensive line comprising 59 styles and sizes, we can select a machine suitable for almost any locality or formation, and arranged for almost any kind of power. Write for new illustrated catalog No. 145, Free.

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TARS MAKE DOLLARS

you're a man of energy and business ability, here's an opening worth consideration. There is a great demand for drilled water wells, and there's large sure profits to the man with a

STAR DRILLING MACHINE
Portable—Steam or Gasoline
Best by test. Low in price, high in practical worth. You can make it pay for itself and earn dividends all the time. Look into this! Sold on payment plan if desired.

Our 140-page catalogue describes 21 different Star Outfits. Write us and we'll mail you this book which will point the way to money making. Write today.

Star Drilling Machine Co.
642 Washington St.
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EDISON

Phonographs and Records. Mention this magazine and ask for complete EDISON catalogs, prices and terms. Mailed FREE and POSTPAID

TRADE MARK **Daynes-Beebe Music Co.**
Salt Lake City, Utah
Thomas Edison

For Greatest Satisfaction Use DOUBLE SERVICE Automobile Tires

Guaranteed 7,000 Miles Service
Absolutely Punctureproof

Double Service Tires are made double the thickness of the best standard make tires. This 100% greater wearing surface naturally gives that much more mileage and service. The average of 12 miles of tough fabric and one inch surface tread rubber makes these tires absolutely punctureproof. These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—their space and pressure being the same. They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use in the U. S. government and European War service. Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer:

PRICES

Tires Tubes	Tires Tubes
32 in. \$3.60 \$2.80	36x4 in. \$17.45 \$4.65
34 in. 10.85 8.10	36x4 1/2 in. 21.20 5.60
36 in. 12.75 9.20	36x4 3/4 in. 22.60 6.75
38 in. 15.75 4.20	38x4 1/2 in. 23.00 6.30
40 in. 16.70 4.35	38x5 in. 26.30 6.60

All other sizes not included in above list furnished. Non-skids at 10% additional. Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.

Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Write for the descriptive folder upon request. Write for it.

Double Service Tire & Rubber Co., Akron, O.
Dept.

tion Utah Farmer when you write

THE VALUE OF A COW TESTING ASSOCIATION (Continued from page 3)

This is a remarkable showing for the month of September due to the poor quality of pasture in this month, and adverse conditions brought about by flies. None of these cows received any other feed than pasture.

The following is a comparison for the ten best and the ten poorest herds in the Association for the month of September.

Name	No. Cows	Breed	Average Production Per Cow
T. W. Hall	12	Mixed	36.4
Geo. Perkins	9	Holstein	24.8
John Darley	21	Jerseys	32.0
Wm. Jones	5	Holstein	31.9
J. L. Kerr	4	Mixed	31.7
Frank Price	12	Shorthorn	30.7
John L. Green	8	Mixed	26.1
John Perkins	4	Mixed	25.8
A. W. Archibald	7	Holstein	25.7
Wm. Darley	17	Jerseys	24.3

Ten Lowest Producing herds in September.		
A	20	11.6
B	12	15.1
C	7	16.9
D	11	17.1
E	3	17.3
F	6	17.9
G	15	18.7
H	11	18.9
I	12	19.0
J	5	19.0

There were 483 cows on test during the month and these cows produced an average of 22.8 pounds of butterfat for the month. The average production for the ten best herds was 29.9 pounds of fat while the average of the ten poorest herds was 17.2 pounds of fat, a difference of 12.7 pounds of fat in favor of each cow in the ten better producing herds over those of the ten poorer herds and an average of 7.2 pounds of fat more for each cow of the ten better producing herds over the average cow in the 44 herds of the Association.

SELECTION AND STORAGE OF "MOTHER" ROOTS

"Mother" roots which are to be saved for seed production should be carefully selected when the root crop is being harvested this fall. The size of the mother root is not the most important consideration. The largest roots are quite apt to be irregular in shape and are often forked or branched. A smooth, symmetrical root of ordinary size or even a small root, if well proportioned, will usually produce as much as will the larger ill-bapen ones. Less storage space will also be required for the roots of ordinary size. The tops of the roots should be twisted off but not in such a way as to remove the crown. Growth the following spring starts from the crown and hence it should not be injured.

The storage of the roots over winter, siloing as it is called, requires considerable attention. Dry sand is the best material in which to store them but this is not practical unless a small number of roots are to be saved. Ordinarily the roots may be piled upon the surface of the ground or in shallow trenches in ricks five or six feet wide and then given suitable

My Big Factory Output Makes WITTE Prices Low

ED. H. WITTE

SO far as actual engine value is concerned, I would be justified in charging double the present prices for WITTE Engines. Great factory efficiency and selling direct from factory to user makes these prices possible.

I would rather manufacture 10,000 engines a year at a profit of one dollar each, than only 1000 engines at \$10 each, or 100 at \$100 profit each. Every engine I sell helps sell others.

It has been proven that quantity production makes production cost low. I could not build WITTE engines so good if I built only hundreds while I build thousands. A man, for example, who turns fly wheels all day can do a quicker job and better job than if he worked at it only a half hour each day and then ran a truck or swept the floor and worked on pistons the rest of the time. In the big WITTE factory, a man becomes an expert in making his particular part of the engine. My actual cost for high quality engine parts is from 1/4 to 1/2 what many others pay. My own private gas well to furnish power helps hold cost down.

WITTE Engines require only one-tenth of one gallon of fuel per horse-power per hour; develop from 30 to 50 percent surplus power over rating. Made in 2, 3, 4, 6, 8, 12, 16 and 22 H.P., sizes in different styles, as ordered to operate on Kerosene, Gasoline, Naphtha, Distillate or Gas, also in stationary, hand portable, portable and saw-rig. 30-Days' Trial; 5-Year Guarantee. Cash or Terms. Write today for big free book, "How to Judge Engines."—Ed. H. Witte.

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3062 Empire Bldg., Pittsburgh, Pa.

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WITTE

Tell Your Ma TO BUY YOU "TOMBOY HOSE"

Then you won't be gettin' licked every day for wearin' holes in your knees.

They wear like "heck."

Kids are "tough" on stockings, but "TOMBOYS" will hold 'em alright.

They are the hose for school days

Fine or coarse rib for girls and boys and at the price of ordinary stockings, too.

ASK YOUR DEALER FOR "TOMBOY HOSE"

If your dealer can't supply you, write us.

John Scowcroft & Sons

Ogden, Utah

covering. A layer of straw is first placed on the roots and over this a light layer of dirt. Successive layers of dirt are then added as the weather becomes more severe. The covering is merely to keep the roots from freezing and must not be heavy enough to cause heating. Sufficient ventilation must also be provided every few feet throughout the ricks to allow the carbon dioxide to escape and fresh air to enter. If the ricks are quite long the roots should be divided every twelve or fifteen feet by straw or dirt.

This will prevent decay spreading through the whole rick in case it should get started at any point.

Occasionally mother roots may be left in the ground just as they grew. This will save labor in handling. Covering with manure, straw, or straw and dirt six to eight inches deep will usually prevent freezing—G. S. Ray, Idaho Experiment Station.

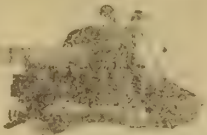
Squash and pumpkins keep better if harvested before frost. They should be handled carefully to prevent bruising.

GREEN CONCRETE MIXERS

No matter how small the job all concrete should be thoroughly mixed. The old method of shoveling is tiresome from a physical standpoint and is very unsatisfactory for consistent mixing.

Our foot, steam or gasoline power mixers will solve the problem for you. Made in several sizes and endorsed by all who have used them. Made in Utah.

Write for information and bulletins. GREEN MACHINERY and MFG. CO. American Building 338 So. Main St. First Building north of Post-Office Salt Lake City, Utah.



VIOLINS

Mandolins, Guitars and all other string instruments. Mention this magazine and ask for catalog and 6-day trial offer.

Daynes-Beebe Music Co. SALT LAKE CITY

A Saddle for \$36 Cash

Our latest Swell Fork Saddle 14 inch swell front, wool lined skirt, 3-inch stirrup leather, 3/4 rig, made of best leather, guaranteed for ten years; hide covered, solid steel fork.



The Fred Mueller Saddle and Harness Co.

1413 Larimer St. Denver, Colo.

Send your name for our catalogue, now ready.

The Celebrated Mueller Saddle



CALKO DIP

(STANDARDIZED)

AN

INSECTIDE & DISINFECTANT FOR CATTLE, SHEEP, HOGS, POULTRY, AND

To be used for disinfecting barns, chicken coops, corrals, hog pens, out-houses, etc.

One Gallon Calko Dip Makes From 50 to 100 gallons of disinfectant.

45c Quart
75c Half-gal.
\$1.25 Gal.

DELIVERED

Calko Hog Powders

IS A HOG CONDITIONER AND WORM EXPELLER

Don't feed worms—save your hogs
25 lb. sack (delivered parcel post) \$2.00
50 lb. sack (delivered freight) \$3.50

Callister-Korth Co.

McIntyre Bldg., Salt Lake City, Ut.

FOR BETTERMENT OF FARMING

In the past 50 years the department of agriculture and its collaborating agencies have spent some \$250,000,000 in research and experiment to the end that American agriculture might be put on a higher plane of efficiency. This vast sum has been invested in working out a plan for putting farming on a permanent basis for checking the decline in natural fertility entailed by wasteful methods of farming inherited from the fathers who learned to farm on virgin soil, and for bringing the various croppings systems up toward the level of most profitable yield. It has been devoted toward safeguarding the living of the farmer of tomorrow by the substitution of scientific practice in farming, thus insuring permanence to the greatest of our physical assets—the fertility of American soil.

In his speech before the National convention of life insurance presidents at New York last month, Assistant Secretary of agriculture Carl Vrooman likened the department of agriculture to an insurance business, in this case the difference being the insuring of fertility and the maximum of returns thru scientific investigation and practice. The means that the department has employed in its work of insuring lasting productivity to the soil and prosperity to those who till it are too various to be catalogued, embracing as they do such widely differing activities as the introduction of new grain and forage plants, some of which are now producing crops worth from \$10,000,000 to \$30,000,000 dollars a year, the study and mapping of soils, the establishment of boys' and girls' agricultural clubs, and the importation of microscopic parasites to prey upon the enemies of our crops. Among the latter may be mentioned the introduction of the parasite that prevented the destruction of the citrus crop of the Pacific coast, effecting a saving of \$10,000,000 a year. Still more striking examples of such activities are the discovery of the hog cholera serum, which is now established as a specific for the worst disease that swine are subject. Likewise, thru the persistent efforts of the department specialists, the eradication of the cattle tick is nearing the complete stage.

One significant point in Mr. Vrooman's speech dealt with the fact that if all the practical methods that have been worked out and advocated by the department of agriculture were put into application, they would effect a potential addition to the value of our farm products of over \$10,000,000 for every growing day in the year. In other words, there would be no difficulty in increasing our production so as to realize that much additional wealth daily during the growing season if the markets of the world were to demand such an increase.

Until recently the spread of agricultural knowledge has been necessarily slow, thru lack of adequate machinery for its dissemination but since the passage of the Smith-Lever act the needed machinery has been available, and now the work of carrying to the farmer the knowledge that has been put in order by the department specialists is going forward with rapid strides. That act virtually puts a deputy secretary of agriculture in every county that wants one—a county agent who represents the department on the ground, and whose function it is to take up the individual needs of the farmers of his territory and carry to them the best constructive advice that the department can give.

This constructive work, of which that of the county agent is typical, is the greatest achievement of the department, and this work is devoted the greater part of its energies. As a result, dividends are now being realized on the big investments in agricultural research and experiments. But these dividends can be multiplied many times according to the intelligence and application devoted to embodying the proved methods of the department into agricultural operations. Far too many farmers are prone to ignore the wisdom offered gratis by the department thru its county agents. Many of these county agents are young men, but it must not be lost sight of that "it is the young idea that begins to shoot." Moreover, when the ammunition of the "young idea" is well primed with proved views of department specialists, it is foolish to stand on the ceremony of "not taking advice from a youngster." It should always be borne in mind that the advice and suggestions of the county agent are based on scientific facts. Drop prejudice and regard your county agent in his true light—a counselor from the department of agriculture.

All great men study continually, whether they be doctors, lawyers, writers or leaders in the industrial world. They have to study to keep pace with their work. In this respect the farmer is a lucky man; a great government with unlimited means and resources is at his service—is doing his studying for him. It is just a matter of using the information offered.—Better Farming.

PROPER CARE IN HARVESTING AND STORING NECESSARY

Utah potato growers are annually losing large sums of money through the careless digging and storing of their crop, according to Dr. George R. Hill, Director of the School of Agriculture of the Utah Agricultural College, who has spent several years studying potato diseases in the West. Dr. Hill states that he has seen whole carloads of potatoes spoiled by dry rot before reaching their destination. This disease, which appears in potatoes both in storage and during shipment, is due to a fungus known commonly as a wound parasite. This parasite cannot enter a healthy potato under normal condition, but must find access through a broken skin. Wherever the parasite enters will appear an area of dry rot.

The obvious method to pursue to prevent this disease is to harvest the potatoes without bruising them. While some types of potato diggers are more apt to cause bruises than others, most damaged skins are caused by digging the potatoes while still green. The skin is then easily bruised and will slip. Dr. Hill reports that often times 50% of the whole crop from a field of potatoes will be damaged because the potatoes are dug too early. Under such conditions the losses are very heavy. Harvesting should be postponed until the potatoes are fully ripe. If the rows have been well ridged there will be little or no danger from frost.

After harvest, if the potatoes are not to be disposed of immediately, they should be stored in clean, well ventilated pits or cellars. In pits or cellars where potatoes have been attacked very extensively by dry rot the fungus is so prevalent that even healthy potatoes are affected, the parasite gaining entrance through the breathing pores. There is also great danger



KEEP THE RATS AWAY

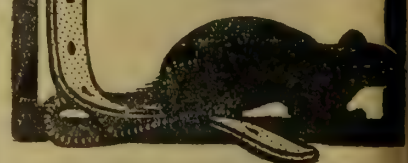
Rodents will not touch harness that is treated with

EUREKA HARNESS OIL

That is because Eureka contains no animal or vegetable oils. Keeps your harness soft, pliable and strong.

Dealers everywhere

THE CONTINENTAL OIL CO.
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UTILIZE FRUITS

With cold winter days so near, the thoughts of dainty, tasty jellies and delicious jams made right at home are natural. They are cheaper than substitutes—and, oh, so much better. The West's grapes and apples are now available. Utilize them this year—you'll have success by using

Western-made Sugar

from dry rot and other fungus disease. If potatoes are stored in moist cell or pits, or in storage places in which potatoes have been stored for a number of years without the cellar or being cleaned and disinfected. Direct sunlight, where available, acts as a wonderful disinfectant. Where available the walls and floors may be sprayed with a solution of formalin or mercuric chloride.

GREAT LOSSES BY FIRE AND HOW TO HELP PREVENT THEM

It is estimated that \$250,000,000, worth of property is burned up each year, say nothing about the great expense of fire departments and money paid insurance companies.

Much of this great loss to life and and property could be prevented. October 9th has been set apart as Fire Prevention Day and proper observance of the day should be given.

Property burned is property gone forever. The fire insurance companies do not cover the least part of the loss. They merely collect and distribute the fire tax represented by their policies. They actually pay nothing.

A heavy share of this gigantic loss—as well as a large percentage of the 3,000 persons killed and the 6,000 injured every year by fire—falls upon rural communities. The reasons are:

First, remoteness of the average farm from town and lack of adequate means of fire protection on the average farm.

Second, commonness of fires on farms caused by lightning and carelessness.

Third, prevalence of wooden construction.

The ways to help prevent fires are: Clean up! Get rid of all burnable trash.

Be everlastingly careful!

Safeguard all buildings against fire.

Fix by law individual responsibility for fires.

Enforce these laws.

Never have a stove near woodwork which is unprotected by metal sheeting and never dump hot ashes into wooden receptacles.

Never clean or permit others to clean garments with volatile fluids at night or in the day time if there is an open flame in the room.

Never use or permit the use of oil lamps that are top heavy or are fitted with paper or cloth shades.

Do not use candles on Christmas trees or for night decoration except under constant observation and with extreme care.

One fire-breeding habit aimed at is the lax handling of matches. They should be kept in metallic boxes out of the reach of children, and they should not be left carelessly about.

Defective heating-apparatus is another frequent cause of fires on farms. Chimney-fires, stoves and furnaces should be given periodical inspections and the defects remedied.

The growing use of gasoline and electricity increases the fire hazard. Automobiles and gasoline engines should not be kept in barns, but housed in separate buildings made of concrete galvanized iron, stone or brick. Gasoline should be stored in underground tanks.

The greatest care should be exercised in burning weeds and rubbish.

Women and employees should be taught prudence in the use of kerosene and other oils. They should not fill lamps near another light. Lamps always should be kept clean and well trimmed. Open flame lights should never be carried into barns, and utmost care should be taken to place lighted candles where they will not be overturned.

An abundant supply of water should be kept on hand to fight fire. At least six bucketsful should be kept in the passageway of the barn. A large tank or several barrels filled with water also should be kept handy. Build a cistern near the barn with a good force pump and hose attached.

All farm property, crops, implements and household goods should be insured.

The use of a little common sense will greatly reduce the fire losses. We know a great deal more now than we did about this important problem.

Fires, when they come, are awful. Prevent them if possible.

BEST GRADE OF OIL CHEAPEST IN END

E. R. Gross, Colorado Agricultural College.

Many a man has been surprised to be told that he saws his whiskers off. Yet this is exactly what he does when he shaves. Examination of the edge of a well-sharpened razor, under the microscope, shows not a smooth edge, as was once supposed, but a series of more or less regular teeth. This saw-tooth edge, is the junction between the two surfaces of the blade and cannot be avoided.

If this is the condition on a highly polished razor blade, what enormous hills and valleys must one expect to find on the surface of the ordinary polished bearings used in machinery and motors. These rough surfaces, rubbing together, produce friction, which reduces the efficiency of any machine. Roller or ball bearings overcome friction to a considerable extent, but there are places where they cannot be used. In these cases oil takes their place. Oil actually works very much like ball bearings, the two sliding surfaces rolling over little globules of oil.

Just as in the case of ball bearings, the little globules of oil finally become "chipped" so that they no longer roll easily. When this time comes it must be renewed. Oil that has become black from use has left only a small percentage of its lubricating qualities.

The best grades of oil are most resistant to the destructive agents, heat, friction and wear, which cause it to deteriorate. For most uses, a cheap grade of oil costs more in the end than a good grade. Even the best grade must occasionally be replaced. Probably the hardest task oil is called upon to perform is to lubricate the piston and cylinder of an engine which are exposed to the intense heat of burning gases. For this purpose the oil cannot be too good.

WATERPROOF PAINT

Wooden tubs or barrels that are to be used for watering the chickens, should be painted with a waterproof paint made of skim-milk and cement. The method of making this paint is as follows:

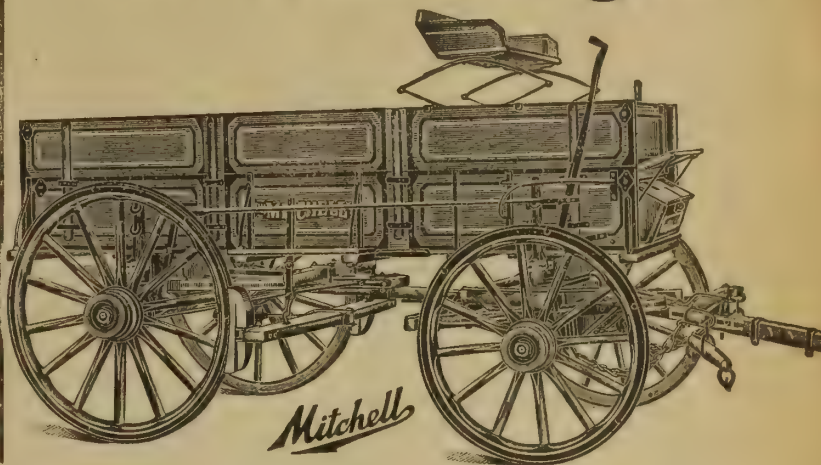
Into one gallon of skim-milk mix three or four pounds of Portland cement. Mix thoroughly, stirring with a brush or stick, and keep stirred while you paint the inside of the barrel. The mixture may be colored with Venetian red or yellow ochre, if a colored paint is desired.

If there has been roup or other contagious disease about the chicken house, it is well to paint the interior with this mixture, to which should be added carbolic acid or other good disinfectant. Never mix more than will be required at one time. When thru for the time being, wash the vessels in which the mixture was made, and also the brushes.—Wallace Farmer.

COMPARISONS ARE ODISIOUS

A Swede was being examined in a case in a Minnesota town where the defendant was accused of breaking a

Mitchell Wagons



The Monarch of the Road—all sizes, and equipment for every purpose—on hand here—full information upon request.

Utah Implement-Vehicle Co.

SALT LAKE



Building for the Future

No community builds only for the present. Public buildings, parks, driveways and viaducts, for example, are planned to meet the requirements of the community's growth.

A telephone company must also build for the future. Communities are always growing up to their telephone development. Hence exchanges, switchboards and subways must be built, not only to care for present needs, but they must be planned to be readily and economically adapted to necessary extensions and developments for several years ahead.

Construction plans are based on careful studies of each locality by men especially trained in estimating possibilities in growth of population and commercial and industrial expansion.

It is the long look ahead that enables our engineers to anticipate the future needs of each locality and to provide increased telephone facilities when needed, most efficiently and economically.

The public is best served by this policy of anticipating rather than trailing in the rear of a community's advancement.

The Mountain States Telephone and Telegraph Co.

plate-glass window with a large stone. He was pressed to tell how big the stone was, but he could not explain.

"Was it as big as my fist?" asked the judge, who had taken over the examination from the lawyers in the hope of getting some results.

"It ban bigger," the Swede replied. "Was it as big as my two fists?"

"It ban bigger."

"Was it as big as my head?"

"It ban about as long, but not so thick," replied the Swede amid the laughter of all but the judge.



Indoor Closet

More Comfortable, Healthful, Convenient

Eliminates the out-door privy, open vault and cess-pool, which are breeding places for germs. Have a warm, sanitary, odorless toilet right in your house. No going out in cold weather. A boon to invalids. Endorsed by State Boards of Health.

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"If you've ever tasted the big, tender, tasty, light biscuits, doughnuts, cakes and other things made with Calumet you can't blame me for being tempted.

"Mother sticks to Calumet because, like millions of housewives, she knows it means sure, uniform results—better bakings every bake day—purity in the can and purity in the baking. Calumet is economical to buy and to use. Try it now on the money back guarantee."



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SALT LAKE CITY

When you answer the advertise ments in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

HOME

HOME MADE GRAPE JUICE

A great many grapes are raised in Utah, more could be produced with a profit. One of the modern products of the grapes is grape juice.

Grape juice is a wholesome, delicious and expensive luxury—if you buy it. It can be made at home quite as delicious and health-giving at little cost.

For invalids and the "near sick" it is most beneficial. It is equally good for well people, furnishing at all seasons a refreshing and nourishing non-alcoholic drink.

Some housewives cook the grapes and squeeze out the juice with more or less of the pulp, but this process injures the navor and the beverage is not as clear as that made by the following formula, which is substantially the same as that used by the large commercial concerns:

Use fruit that is sound and ripe. Crush and press the grapes on the stem in a cider mill. Heat this clear juice slowly to 175 degrees Fahrenheit and stir frequently. A good way is to put the juice in a shot-gun can, setting this container in a wash boiler nearly full of water.

A 25-cent dairy thermometer may be used to regulate the temperature and care should be taken not to heat the juice above 175 degrees or its fine flavor will be injured.

This "pasteurizing" process destroys the bacteria that otherwise would start fermentation and keeps the grape juice from spoiling or turning to wine or vinegar.

After heating let the juice settle for 24 hours in an enameled vessel. The clear liquid should then be drawn off carefully from the sediment and strained through several thicknesses of muslin. It is then ready to be bottled and should be sterilized again as follows:

Place the filled bottles in a wash boiler partly filled with water. On the bottom of the boiler place a piece of thin wood or grate for the bottles to rest on. Heat the water to 195 degrees and remove the bottles after 20 minutes. Cork tightly at once and set away in a cool, dark place until needed. The corks should be kept for 10 minutes in boiling water to sterilize them before using. After being corked the neck of each bottle may be dipped in melted paraffin to seal them air-tight.

Any variety of grapes may be used, the Concord and Catawba being the favorites. The sweet California grapes do not make as good a product as the common juicy varieties grown throughout the Middle West.

Grapes are among the most healthful of fruits and every farm should have its vineyard for domestic use. They are prolific and easy to raise. The conversion of a surplus crop into grape juice can be made a source of domestic comfort and commercial profit. There is a growing demand for good grape juice at 50 cents a quart. Four pounds of grapes will make over a quart of juice and the waste makes good hog feed.

A MODEL HUSBAND

"Does your husband keep regular hours?"

"Well, I should say he did. He comes right straight home very night as soon as the saloons are closed."

HOME NURSING

(From bulletin sent out by Utah Agriculture College).

Home Nursing

"How to Keep Well"

"Talk Health. The dreary never-changing tale

Of mortal maladies is worn and stale. You cannot charm or interest or please By harping on that minor chord—disease.

"Whatever the weather may be' says he,

'Whatever the weather may be,' Its the songs you sing and the smiles you wear,

That's a-making the sun shine every-where."

Miss Charlotte Aikens in her book of practical home nursing quotes the foregoing as a reminder that health and the holding thereof must always

be uppermost in our minds. The time will come when to be below normal, physically out of poise, unfit to do our part of the daily task, will be considered a disgrace. There is a boys' school where grades are lowered, if through carelessness or indiscretion, illness ensues. Illness not resulting from inherited organic disease or accident is largely traceable to either one or both of the above, or to ignorance of the laws of health, and even accidents occur from a physical lack of control of nerves or body. To keep the normal body in a happy working condition the laws of health must be understood.

The first law is that the body must have plenty of fresh air indoors and out. Windows of rooms should be so placed as to make a cross current. Sleeping porches have been the means of curing a tendency to catching cold.



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The night air is purer than the day. Out-door exercise with freedom from hurry is a fine tonic.

Second is the great germ destroyer, Sunshine. Pull up the blinds, or better still discard them for the double curtain and valence. Especially let the sunshine into bedrooms and kitchens. Our bodies would be the better if more sun baths were taken. Clothes closets should be aired frequently, also clothing and bedding. Bathrooms and toilets should have outside windows.

Cleanliness outside and within is a third law. Nearly everyone recognizes the necessity for frequent bathing even if it is not always made a practice, but there are a number who do not realize that no matter how clean the skin and clothing may be, if the waste matters of the body are not eliminated, that the cleanliness is only skin deep. Elimination or the cleaning of the body from the wastes that gather must be a daily duty done at a regular time or ill health will result. The body devitalized by the poison is a prey to disease.

Proper food in quantities and kind to suit the individual needs, well masticated and plenty of water between meals, is a fourth law. People need to study the question of nutrition as applied to their own and their children's needs.

Rest and Recreation are the fifth law of human well being and this is the law often most neglected. It does not mean the enforced rest of sickness or an occasional vacation, but a daily planning for a certain part of each day to be spent in rest and recreation. The latter term means to make anew or as good as before. This is just what happens when we drop daily labors to read, visit, follow some line of endeavor particularly enjoyed by us. The tired muscles relax, a new set are brought into play, the taut nerves are released and hurry is

replaced by calm. The planned life, that takes time to prepare for work, is the only one that obeys this fifth law.

HOW TO MAKE REAL OLD-FASHIONED BAKED BEANS

"Pick over three cupfuls of pea beans, cover with cold water, and soak for several hours. Drain, put in stewpan, cover with fresh water, heat gradually to the boiling point, and let simmer until skins will burst, which is best determined by taking a few beans on the tip of a spoon and blowing on them, when skins will burst if sufficiently cooked. Drain beans. Scrape a three-fourths-pound piece of fat salt pork, remove a one-fourth-inch slice and put in bottom of bean pot. Cut through rind of remaining pork at one-half-inch distances. Put beans in pot and bury pork in beans, leaving the rind exposed. Mix one tablespoonful of salt, two tablespoonfuls of sugar, and two tablespoonfuls of molasses. Add one cupful of boiling water and pour mixture over beans; then add enough boiling water to cover beans. Bake in a slow oven eight hours, uncovering the last hour of the cooking that the rind may become brown. Add more boiling water as needed."—Woman's Home Companion.

SQUASH FRITTERS

Peel, remove seeds and cut in small pieces, two large squash. Cook for ten minutes in boiling water, then drain well and mash fine. When cool add

1 well beaten egg
1 teaspoon of salt
½ teaspoon of white pepper
1 teaspoon of baking powder
Mix thoroughly.

Add sufficient flour to make a drop batter. Fry in hot fat until golden brown. Drain on soft paper to absorb fat and serve.

CREAM OF LETTUCE

All the outer leaves may be used. To one pint of shredded leaves, add one pint of water. Cook until soft, then drain and rub pulp through fine sieve. Measure and add an equal amount of milk.

2 tablespoons of butter.
2 tablespoons of flour.

Blend and add one pint of above mixture; cook for five minutes.

Season with salt, paprika and one-half teaspoon of finely chopped parsley.

PRINCIPLE OF MAGIC CLEANERS

The principle of the magic cleaner and similar well-advertised devices for cleaning silver is so simple that a housekeeper should be able to make an outfit with the outlay of a few cents for zinc. The blackening of silver is due to the formation of a compound with sulphur. This compound may be broken up by an electrolytic current produced in the following manner: In a vessel large enough to hold the silver to be cleaned, place a strip or piece of zinc about the size of a person's hand. Add sufficient hot water to cover the silver. To each quart of water add about a teaspoonful of salt. An equal amount of soda is sometimes added, but is not necessary. Cold or warm water may be used but the action of cold water is slower. Immerse the silver to be cleaned. It may be convenient to place it in a wire basket. Unless the silver is badly darkened, the stains will disappear in a minute or to, when the silver should be rinsed and dried.

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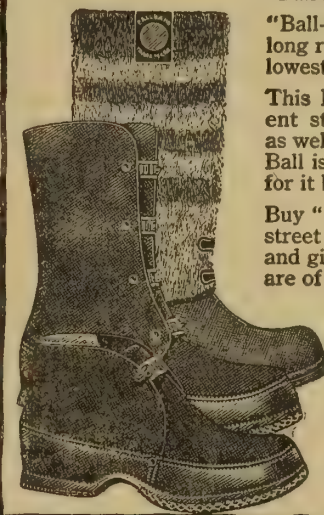
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Field and Farm

SEED SELECTION OF CORN

IN THE FIELD

Autumn is the time to prepare for a profitable corn crop the following season. At corn-ripening time drop all other business and select an abundance of seed corn. The process is too important to be conducted incidentally while husking. When selecting seed corn give the process your entire attention. Get the very best that is to be had and preserve it well, and your increased yields will return you more profit than any other work you can do on your farm.

In 13 years investigations, the yield was raised from an average of 63 bushels of dry shelled corn, from 1901 to 1907, to an average of 75 bushels, from 1907 to 1913. The principal influence producing this increase in yield was the selection and the care of seed corn.

The only proper way to select seed corn is from the stalks standing where they grew, as soon as ripe and before the first hard freeze. As soon as the crop ripens, go through the field with seed-picking bags, and husk the ears from the stalks that have produced the most corn without having any special advantages such as space, moisture, or fertility. Avoid the large ears on stalks standing singly with an unusual amount of space around them. Preference should be given the plants that have produced most heavily

in competition with a full stand of less productive plants. In all localities the inherent tendency of the plant to produce heavily of sound dry, shelled corn is of most importance. Late-maturing plants with ears which are heavy because of an excessive amount of sap should be ignored. Sapiness greatly increases the weight and is likely to destroy the quality. In the Central and Southern States, all other things being equal, short, thick stalks are preferable. Short stalks are not so easily blown down and permit thicker planting. Thick stalks are not so easily broken down and in general are more productive than slender ones. The tendency for corn to produce suckers is hereditary. Other things being equal, seed should be taken from stalks that have no suckers.

The same day seed corn is gathered the husked ears should be put in a dry place where there is free circulation of air and placed in such a manner that the ears do not touch each other. This is the only safe procedure. Good seed is repeatedly ruined because it is thought to be already dry enough when gathered and that the precaution mentioned above is unnecessary. Many farmers believe that their autumns are so dry that such care is superfluous. Seed corn in every locality gathered at ripening time will be benefited by drying as suggested. If left in the husk long after ripening it may sprout or mildew during warm, wet weather or become infested with weevils. The vitality of seed is often reduced by leaving it in a sack or in a pile for even a day after gathering. During warm weather, with some moisture in the cobs and kernels, the ears heat or mildew in a remarkably short time. The best possible treatment immediately after gathering is to string the ears. Ordinarily the best place to hang strings of ears is in an open shed or loft. Wire racks are more convenient, and in the end cheaper, than binder twine. Such racks may be made from electrically welded lawn fencing. The cutting of the fencing into seed-corn racks is done without any waste.

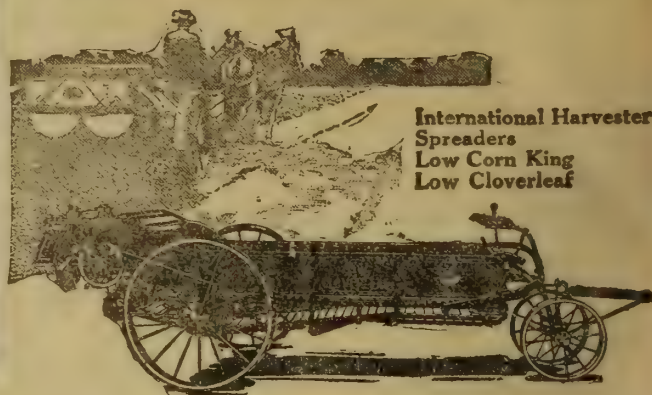
Only during unusually damp weather at seed-gathering time will fire be necessary. If heat is employed in a poorly ventilated room it will do the seed ears more injury than good. If used, the fire should be slow, long continued, and situated below the seed ears, with good ventilation above them.

After hanging in the shed or lying on the racks for two months, the seed ears should be as dry as a bone and contain less than 10 per cent of moisture. They can remain where they dried or be stored in mouse-proof barrels, boxes, or crates during the winter, but in either case they must not be exposed to a damp atmosphere, or they will absorb moisture and be injured.

Some farmers place the thoroughly dried seed ears in the center of a wheat bin and fill the bin with loose, dry wheat.

In localities where weevils and grain moths injure stored grain, the thoroughly dry seed ears should be stored in very tight mouseproof receptacles with 1 pound of moth balls or naphthalene inclosed for each bushel of corn. This quantity tightly inclosed with the corn will prevent damage from these insects and will not injure the seed. If at any time

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Low Corn King
Low Cloverleaf

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signs of weevils or grain moths show on the corn, it should be inclosed with carbon bisulphid in practically airtight rooms, bins, boxes, or barrels for 48 hours. The bisulphid should be placed in shallow dishes or pans on top of the seed. Onehalf pint is sufficient for a box or barrel holding 10 bushels or less. One pound is sufficient for a room or bin 10 feet each way. After fumigation the ears must be thoroughly aired, taking care that no fire is present when the fumigating box is opened.

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**PURPOSE AND SIZE
OF FARM LOANS**

C. W. Thompson, U. S. Department of Agriculture.

Every farmer before borrowing money should ask himself certain questions. Very often the farmer who does not ask himself these questions may find that the banker will require answers before he makes the loan.

As the importance of promoting and encouraging improved systems of farming becomes increasingly apparent, attention will be directed more and more toward such questions as the purpose and size of farm loans. How are the proceeds of a proposed loan to be employed? Are they to be expended for a productive purpose, such as would lead to improvement in the farming business? Is the size of the loan well adapted to the purpose in view? Does the period for which the loan is to run conform to the time the capital is actually needed? All of these questions have a direct bearing on the costs of short-time farm loans.

Purpose of the Loan

The use of any given loan ought to yield a return sufficient at least to repay both interest and principal. If the returns are not sufficient for this purpose, then the money should not be borrowed. The only way in which the use of credit can be directed so as to serve the interests of improved agriculture is to control the extension of loans so that they may be used for productive purposes only. This means, at the same time, a safer use of credit.

In some localities banks offer loans to farmers at reduced rates of interest when the money borrowed is used for some specific and approved purpose, such as the purchase of live-stock, the building of silos, or the making of other improvements which will make farming more profitable under the given conditions.

Size of the Loan.

The banker usually charges a higher rate of interest on a small loan than on a large one. The clerical and bookkeeping expenses are the same in both cases. Unless a higher rate were charged on small loans, the point would be reached where the expenses connected with such loans would be greater than the interest. On the other hand, it pays the banker to handle large loans at a lower rate of interest.

"The importance of restriction loans to those for approved productive purposes and of having the size of the loan conform to the requirements of sound farm investment has been recognized by some bankers to such an extent that they employ advisers who discuss such questions with their farmer patrons in order to promote the interests of their farm-loan business. The agricultural adviser employed by a bank, after a conference with the prospective borrower, decides whether the proposed loan is business-like and expedient. If the purpose of the loan meets with his approval, he works out a plan of procedure with the farmer. The farmer may consider that he needs a loan of \$1,000. As a result of his conference with the adviser it may be found that \$700 is sufficient. They discuss the safety of the proposed investment, the additional equipment necessary, and in case live-stock is to be purchased, the crop rotation that will furnish the most economical supply of feed. These items are all arranged and agreed up-

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on before the bank makes the loan. added protection to both the farmer and the banker."

After the loan has been made and the capital invested it is the duty of the adviser to visit the farm from time to time to see if the plan adopted is adhered to and if the investment is yielding proper results. Such a plan means

If a horse is in poor condition, and fails to respond to feed and care, there is usually something wrong with the teeth.

POULTRY

FALL SUGGESTIONS FOR POULTRY PEOPLE

Getting rid of the culls in the fall is one of the most important matters that challenges the attention of the poultryman at this season. Culls are a dead weight and no man should carry them any longer than is absolutely necessary. By this we mean that they should be fattened and sold in time to catch high prices just before the holidays. With a month's warning, the average poultryman can get all of his surplus fowls in good condition for October and November markets.

Get your poultry in off the range before cold weather comes. It is well to have your laying hens in their winter quarters, before frost comes. There is a two-fold object in doing this. In the first place, they should have a chance to get accustomed to their new surroundings before settling down to winter laying and they should not be forced to endure the rigors of frosty weather in the open. In either case it will set back your supply of eggs three or four weeks if you fail to take this precaution.

Chicken pox is a common disease of poultry at this time of the year. It is noticeable by small pox or growths on comb and wattles and a discharge from the nostrils. It corresponds to colds in the human family. It may lead to roup, that fatal disease of poultry. If proper precautions are taken in time you will not be bothered by this troublesome disease. Keep your quarters free from dampness and see that there are no drafts or sudden exposures to the weather. If in a house see that there are no drafts. Sudden changes in the weather, so likely to occur at this time of the year, catch poultry as well as humans. If there is any evidence of the pox among your fowls, isolate the afflicted ones and keep them in quarantine until they are well over it or, in advanced cases, use the ax.

Do not try to carry too many cockerels through the winter. All inferior ones should be fattened up and sold along with the culls. Too many poultrymen eat up their profits in feeding a surplus of cockerels through the long winter months. Do not keep a single fowl that is not a producer either among the cocks or hens.

In fattening your culls, do not give them green food of any kind. Feed

largely on corn and fat producing rations. Poultry experts tell us that green food or vegetable matter in that form tends to defeat this end. The only profitable way to handle culls is to fatten them as quickly and cheaply as possible. The best way is to eliminate green food entirely.

If you wish to increase your poultry profits, by all means provide a separate pen for your breeders this season. You may be unable to afford a pen for all your fowls. It would be better to give your breeding fowls the preference and let them have the poultry house and run, and force the other fowls to range at large. The breeders should be the result of severe culling both for the type of your special breed, for vitality, health and general appearance. If you follow this system two or three seasons you will find a marked increase in your profit side of the ledger. If it pays to cull the breeding stock of your other farm stock, why would it not be profitable to try it with the poultry?—C. C. Sherlock.

DUST BATHS

Laying hens must have their morning dust bath if they are to lay the maximum number of eggs during the winter. It is a necessary luxury for them. By its use they are enabled to rid themselves of mites and to remove all scales and dirt from the skin.

Lice and mites do their greatest injury to the fowls at night while on the roost. Instinctively they look for a place to dust in the morning. Do not force your hens to dust in the droppings or feed litter. During the summer they will usually find their own dusting place such as the road or in the shade of trees and shrubbery, but in the winter it must be provided for them. Nail an old grocery box in one corner of the house. Elevate it above the floor so that it will not get filled with straw or litter and put in six or eight inches of dusting material. During moderate weather their box may be placed out in the pen.

To be effective the dusting material must be very light and dry, and fine enough to fill the breathing pores of the mites and lice. The finer the better.

A good dusting material is composed of equal parts of fine sand, road dust and sifted coal ashes. A cupful of kerosene and a handful of sulphur thoroughly mixed with the dust will make the dust bath still more effective.—C. S. Anderson, Colo. Agr. Col.

FEEDING FOR EGG PRODUCTION

H. L. Kempster, Missouri College of Agriculture.

A hen laying 200 eggs in a year is not at all unusual. A four pound hen laying this number will produce six times her weight in eggs. To do this she will require from seventy to eighty pounds of feed. For economical production it is necessary (1) that the food be properly selected, (2) that it be fed in correct proportion and in a judicious manner in order that her digestive organs may be kept in good condition, (3) that she be fed enough so that she has plenty of surplus for egg production.

The problems of poultry feeding require good judgment and keen observation. Hens fed for egg production should have foods high in the food elements which are found in eggs. Those fed in the fattening pens should have the foods which most

(Continued on page 15)

Money to Loan On Farms

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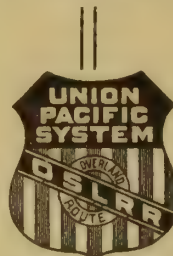
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BETWEEN LOCAL POINTS.

This innovation has been established for the purpose of permitting residents in local O. S. L. territory to visit back and forth Sundays and during week ends.

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—To encourage baseball games and other sports between different towns.

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D. S. Spencer, General Passenger Agent,
Salt Lake City, Utah.

TWO BIG EVENTS

Utah State Fair and Fall Conference
L. D. S. Salt Lake City, Sept. 30th to
Oct. 8th, 1916.

Low excursion rates via Salt Lake Route on sale Nephi and Tintic, and North September 30th to October 8th, inc. Good returning October 12th. All other points on sale September 29th to October 7th, inc. Good returning until October 15th. Extra sleepers and day coaches for this occasion

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Mention Utah Farmer when you write

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This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

Gem Herd of Improved Chester White Swine

This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions of the World's Fair held at Frisco this last year. Both Sire and Dam, is still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale at all times.

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GEO. H. LAWSHE
Falls City Idaho

Cantaloupes \$1.00 Case f. o. b.
Airedale Puppies \$5.00 to \$15.00.
BATES & SONS
Provo, R. F. D. No. 1.

FARM FOR SALE—125 acre farm, 100 acres good beet land with 116 shares in Bear River Canal, all fenced with hog tight wire into seven fields; eleven room frame house equipped with electric lights and water, good barn and sheds. Located 1/2 mile west of Corinne on gravel highway. Terms. This land will be all tiled by Nov. 1st. Enquire of W. T. Davis, State Bank of Brigham City or W. M. Buswell on the premises.

Send in your orders for Butter Wrappers to The Utah Farmer.

FOR SALE

Two registered Clydesdale mares, three and four years old. One team of draft horses; one driving mare. Call Andrew Knudsen, Supt. Utah County Infirmary, Provo, Utah.

UTAH HATCHED WHITE LEGHORN BABY CHICKS \$11.00 PER 100

Circulars, order-blanks, etc., upon request. Candee Colony Brooders carried in stock.

GLENWOOD EGG FARM
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DRY-FARM FOR SALE

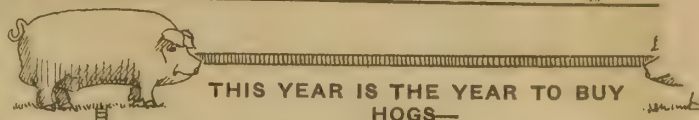
320 acres in Southern Idaho, 170 broken, 100 in wheat, all fenced, good barn and small lumber house. Address J. F. S. Care of Utah Farmer, Lehi, Utah.

FOR SALE

205 acres unimproved on Green River and San Rafael 18 miles below town. Altitude 3980, part can be irrigated by gravity, plenty of water and timber and open range where stock graze winter and summer. Fine Soda spring on land. Ideal for home and ranch.

M. OPPENHEIMER
Elgin Utah

FOR SALE—Prize winner, pronounced by judge at Provo Stock show the best by far Jersey bull shown under 1 year. Age now 7 months. Inquire of owner, J. W. Gessford, 33 East Center street. Phone 341-R.



THIS YEAR IS THE YEAR TO BUY
HOGS—

last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again.

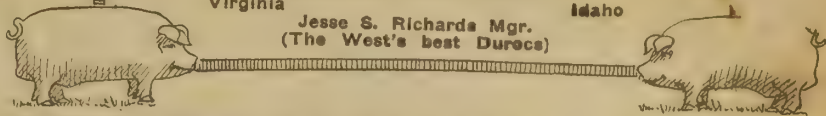
The best time to buy is when pigs are young. Write today.

RICHARDS LIVESTOCK CO.

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Jesse S. Richards Mgr.
(The West's best Durocs)



October Bargains

Our 4-year old Herd Boar
— Defender — 4 spring
boars, 10 spring gilts.

**Spring Lake Stock
Farm**

Payson, Utah.

When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

BUTTER WRAPPERS

We carry a large stock of the Best Vegetable Parchment Butter Wrappers and Especially Prepared Ink for Printing the same. We furnish them Postage Prepaid at the following Prices, money to accompany order.

100	\$.30
200	\$1.25
500	\$2.25
1000	\$3.00

Send all orders to

THE UTAH FARMER
LEHI, UTAH

FEEDING FOR EGG PRODUCTION (Continued from page 14)

conomically produce fat. The best ration, then, is the one which supplies most economically the food requirements of the bird for the purpose for which it is kept.

It should be remembered that one of the principles of poultry feeding is that the hen cannot do well if fed on whole grain ration. Not only does ration of grain fail to furnish the proper food nutrients, but such a ration is difficult for the bird to digest properly. The great fault with the farmer in his poultry feeding is that he attempts to feed a whole grain ration, and generally only one grain ration. Such a ration results in poor egg-production and also causes digestive disorders and liver and kidney troubles. Complaints of this kind frequently come and a suggested change in the ration has usually resulted in the elimination of the trouble. Efficient digestion demands a combination of whole and ground grains. A ration should consist of grains and ground feeds. Generally speaking, twice as much grain should be consumed as ground feed. This depends, of course, upon the nature of the foods fed.

A good ration for egg production can be made with a combination of grains and ground feeds. For grains, equal parts by weight of wheat and corn, or in the winter time twice as much corn as wheat, may be used. For ground feed, a mixture of equal parts of bran, shorts, and corn-meal may be used. Efficient egg production re-

quires also that this ration be supplemented with either sour milk—all that the birds will drink—or in case sour milk is not available, commercial beef scrap. One-fourth of the ground feed should consist of beef scrap in case this is used.

The importance of keeping grit and oyster shell before the birds at all times cannot be over-estimated and is especially important during the winter months.

TOO MUCH BOTHER

The writer, standing near the door of the poultry building at a fair where the feathered exhibit was unusually large and fine, chanced to hear a man remark; "Yes, chickens are all right for the women folks, but it don't hardly pay a man to bother with them. It's too much like boy's play." This remark caused me to turn and see who the speaker was, and I was not surprised when I found I knew him. He was a man who would not succeed in the manufacture of \$20 gold pieces or anything else. A few rods away I saw this man's team. The horses were poor, and the wagon looked to be a century old. I had been to this man's farm several times. The dwelling house was never painted, the outbuildings are poor, ramshackle affairs. Looking over the fields, one could see great patches of weeds where growing crops should be. The fences—well there were hardly any fences at all. Yet this man started out with a good farm and quite a little money, left him by his thrifty old father. The present state of affairs is the result of

shiftlessness pure and simple.

Perhaps the reader may ask what has this to do with poultry. Well, this much, it is just such men who are always decrying progress in anything. They are the men who breed scrubby stock from one year to another. They are men who ridicule those who have built up the magnificent strains of horses and cattle. They are the men who have stuck to their scrub chickens and scrub everything and will continue to stick to them until eternity—unless they can "swap" roosters with some kind-hearted persons who is the fortunate owner of stock of a better grade.—A. E. V.

QUARTER MILLION ACRES CAN BE RECLAIMED

(Continued from page 3)

Numerous unsuccessful systems throughout the state stand as a monument to "cut and try" practice. Surface studies afford little information of value when an underdrainage system is being planned.

Drainage experiments have been made, how can information about them be obtained?

"The results of the investigations referred to have been published in bulletins by the Government and by the State and these pamphlets contain much information of value to those contemplating drainage. They may be had on application."

Can the farmers secure help and assistance and now?

"Advice and assistance may also be had from the engineers representing the Department and the Experiment

Station, such being gratis of course.

It should be impressed upon all persons contemplating drainage that the matter is of great importance and should only be undertaken with full knowledge of existing conditions."

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF AUGUST 24, 1912.

of Utah Farmer, published Saturday, at Lehi, Utah, for October 1, 1916. Postoffice address, Lehi, Utah. Managing Editor, Business Manager, James M. Kirkham. Publishers.

Owners: (If a corporation, give its name and the names and addresses of stockholders holding 1 per cent or more of total stock. If not a corporation give names and addresses of individual owners.) Deseret Farmer Pub. Co.; James M. Kirkham, Lehi, Utah; John A. Widtsoe, Logan, Utah; Thos. Judd, Laverkin, Utah; W. S. Hansen, Fielding, Utah; Jesse Knight, Provo, Utah; R. L. Anderson Estate, Salt Lake City, Utah; L. N. Stohl, Salt Lake City, Utah; John Q. Adams Logan, Utah; F. S. Harris, Logan, Utah; O. A. Kirkham, Salt Lake City, Utah.

Known bondholders, mortgagees, and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities. (If there are none, so state.) None.

JAMES M. KIRKHAM.
Sworn to and subscribed before me this 23 day of September, 1916.

(Seal.) E. L. CHIPMAN,
Notary Public.

Duroc Jerseys Won at Utah State Fair 1916

CHAMPION BOAR
CHAMPION BOAR
CHAMPION BOAR

GRAND CHAMPION SOW
SENIOR CHAMPION SOW
JUNIOR CHAMPION SOW

Prizes, Three Second Prizes, Two Third Prizes, also National Duroc Jersey Breeders Association Silver Cup for Best Young Herd Bred by Exhibitor.

ARDS DEFENDER was again made Grand Champion Boar and was pronounced the best Duroc brought west. He is the big type with quality and his pigs won every prize competed for. Eka Defenderess was made Grand Champion Sow weighing 281 pounds at 6½ months.

We can make immediate deliveries of young stock, either sex from our champion herd at reasonable prices.

Express on stock purchased from us is a small item as our ranch is only 99 miles north of Ogden, or 135 miles north of Salt Lake City, on the main line of the Oregon Short Line R. R.

Richards Livestock Company

Jesse S. Richards, Manager.

Virginia, Idaho.

"The Wests Best Durocs"

Prize Winning Herd

10 Out 13 First Prizes

18 Prizes Taken by 19 Animals

At Utah State Fair, 1916

ASSOCIATED ASHLANE FARMS

This herd combines the blood of the Premier Master Piece, Rival Champion lines of the Berkshire breeding.

A boar of similar breeding sold in the east recently for \$3,500.00.

Single animals, pairs or trio of unrelated breeding can be furnished.

C. P. WARNICK & SONS

Phone 31R3

Pleasant Grove, Utah

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 11 LEHI AND SALT LAKE CITY, UTAH OCTOBER 14, 1916

THE IRRIGATION OF WHEAT

Charts showing results of four years experiments at Utah State Experiment Station. See article on third page.

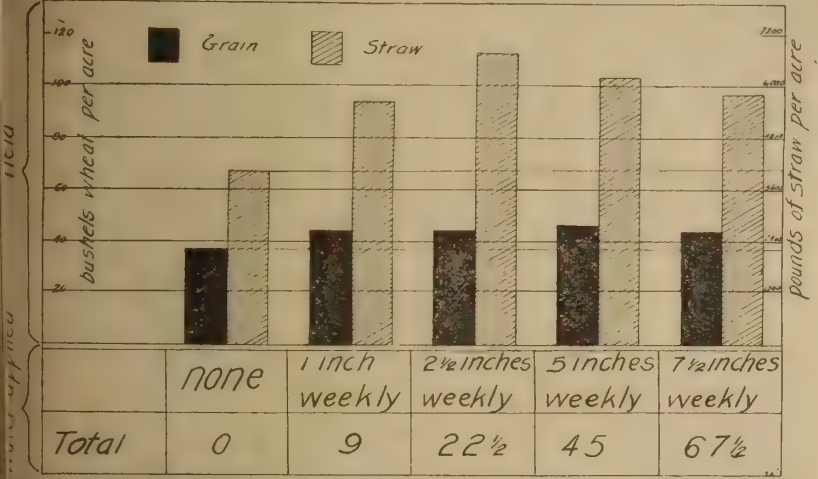


Fig. 1.—Yield of wheat grain and straw on plots receiving different quantities of irrigation water weekly.

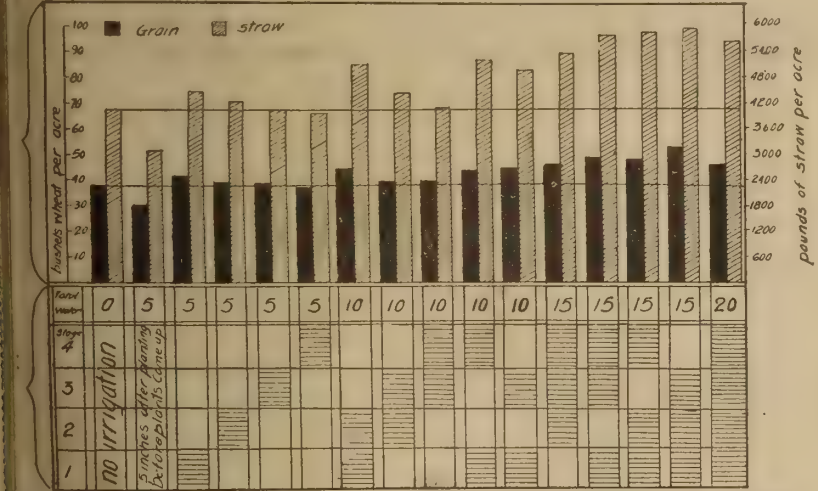


Fig. 2.—Yield of wheat grain and straw on plots receiving various quantities of irrigation water at different stages.

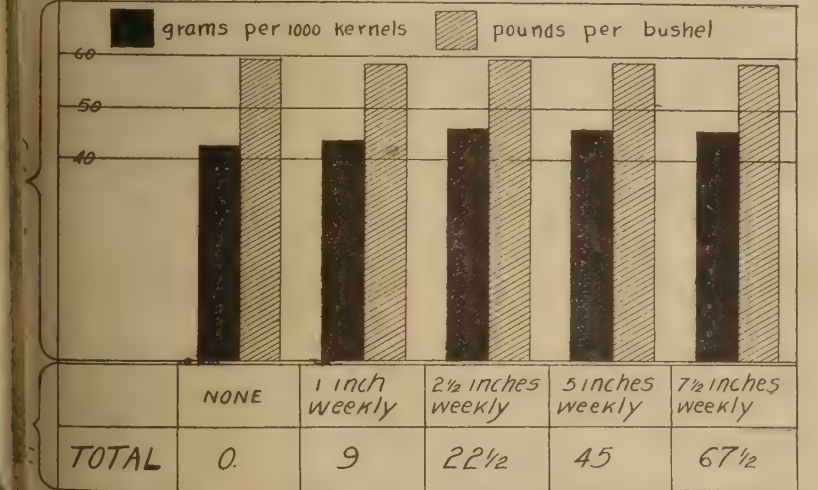


Fig. 3.—Weight of 100 kernels, and pounds per bushel of wheat on plots receiving different quantities of irrigation water weekly.



Fig. 4.—Weight of 100 kernels, and pounds per bushel of wheat on plots receiving various quantities of irrigation water at different stages.

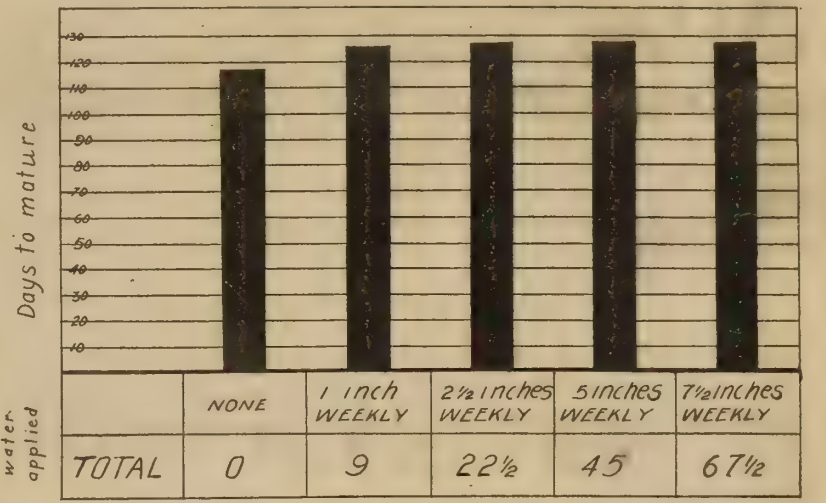
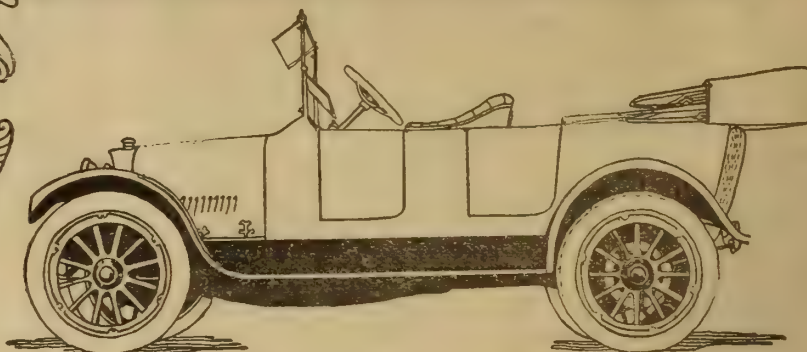


Fig. 5.—Days for wheat to mature on plots receiving different quantities of irrigation water weekly.



Fig. 6.—Days for wheat to mature on plots receiving various quantities of irrigation water at different stages.



The New Reo the Fifth, "The Incomparable Four," \$875, f. o. b. Lansing

Here's the Secret of Reo Reliability

DOUBTLESS YOU'VE WONDERED—knowing as you do, how absolutely dependable are Reo cars—how free from troubles, and how low in upkeep cost:

YOU'VE WONDERED wherein lay the secret of that reliability that is Reo.

WELL, WE'LL TELL YOU. And then you'll wonder at its ridiculous simplicity.

YOU READ, IN THE ADS, how this engineer or that inventor has revolutionized the science of engineering and produced a wonder-working car.

YOU READ THAT every year—only this year it's another engineer. That revolutionary stunt of last year has been forgotten.

IT WAS AS IMPOTENT as a South American revolution—it didn't!

SO THE SECRET ISN'T to be found in any such feat or invention.

REO PERFORMANCE—reliability, dependability, uniformity of performance of all Reos, of whatever model or price—is the result of the taking of infinite pains in the designing, the making and the inspection of the Reo product.

IT'S THE LITTLE THINGS that count—not the big ones.

ANYONE—A BOY EVEN—can make a motor that will be "different." Or an axle, a transmission or a set of springs that might impress the tyro as new and wonderful.

BUT TO MAKE ANY of these vital units better—that is the task—that should be the aim. It has always been the Reo aim.

INFINITE CARE in the fabrication and then in the inspection, and finally in the testing of the assembled whole—that is the secret of Reo success in making, not the most but the best, automobiles.

IF THERE ARE 2000 PARTS in a motor car; and if there's an average of four machining operations on a part—that's 8000 chances for something to go wrong!

AND ONE DEFECTIVE PART—one, however small or seemingly insignificant—that does not fit absolutely, and you'd have a car that would be less than a Reo in performance—more than a Reo in cost of upkeep.

INFINITE PAINS, WE SAID: Perhaps that's too big a term. But if you could know how great is the task—how unremitting the care—to guard against even one little error creeping into any one of these 8000 places—you'd grant us the word "infinite."

"THOSE PESKY LITTLE TROUBLES that are always happening with other cars, are unknown to the Reo owner," says one Reo dealer, "and that's why the demand for Reos is so great."

WHEN YOU STOP TO THINK about it, the troubles you've had with other cars were not big troubles. Your motor didn't drop out of your car or your transmission strip or your frame break in two.

IT WAS THE LITTLE THINGS that pestered your motoring life—parts shaking loose or getting out of adjustment. Dust in bearings—oil leaks—everywhere. Squeaks and creaks and rattles.

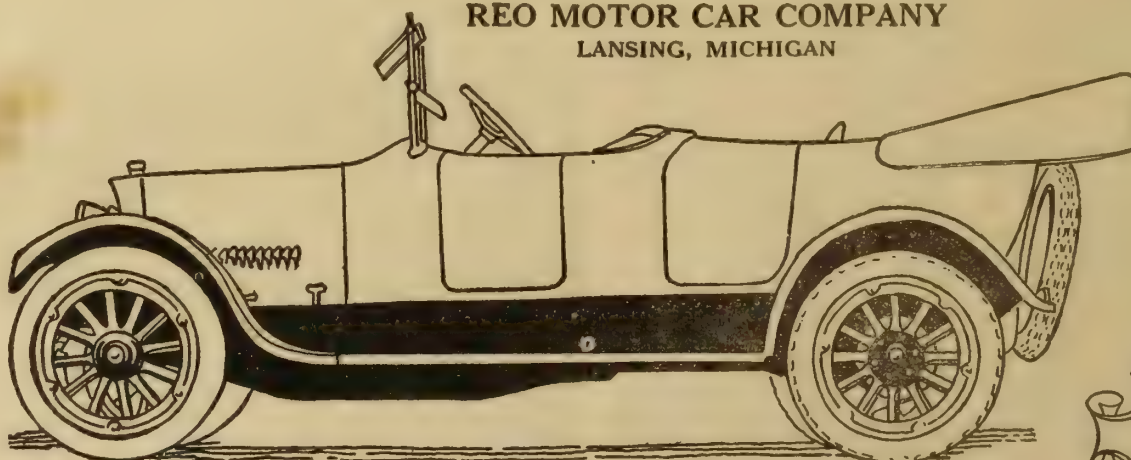
ALWAYS THE DREAD WHEN STARTING out that you might not return. Always the fear when in a hurry that some pesky little trouble resulting from some pesky little defect, of which you were cognizant, might delay you. Wasn't there?

WELL THEREIN LIES the big difference between Reos and other cars—the big difference is in attention to the little things.

IT IS NOT UNCOMMON—in fact—it is the rule—for a new Reo owner to drive his car thousands of miles—a year, two years—without even seeing the inside of a garage or lifting the bonnet to make an adjustment or repair.

HONOR AND FAITH and a Good Intent—these and the attention to little things they dictate—result in Reo Reliability as it is known the world over, "The Gold Standard of Values" in automobiles and motor trucks.

REO MOTOR CAR COMPANY
LANSING, MICHIGAN



The New 7-passenger Reo Six Touring Car, \$1150, f. o. b. Lansing

"THE
GOLD STANDARD
OF VALUES"

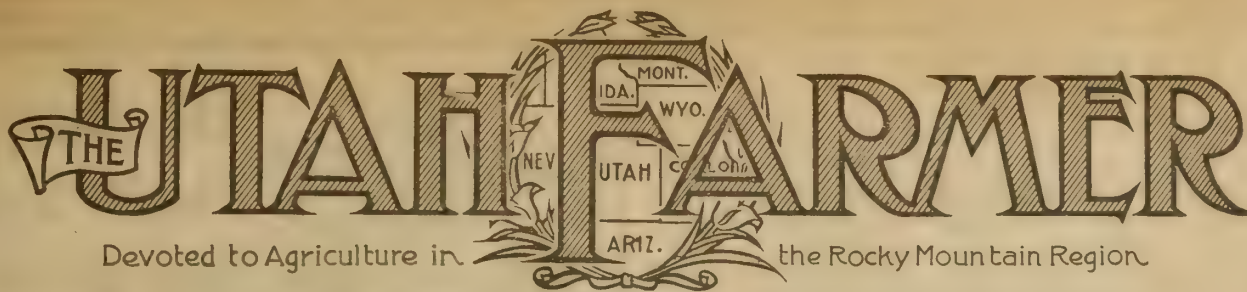
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EVERY
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COMBINED WITH THE DESERET FARMER AND ROCKY MOUNTAIN FARMING

LEHI, UTAH, SATURDAY, OCTOBER 14, 1916

ONE DOLLAR

A YEAR.

FOREIGN

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\$1.50.

No. 11

THE economical use of irrigation water is one of the chief problems of agriculture in arid regions. Much more land is available than can be irrigated by the supply of water even when methods of greatest economy are employed. The total crop of arid regions is, therefore, limited not by land but by water; and the welfare of these regions demands that the irrigation water be used as efficiently as possible.

Maximum economy can be obtained only by a full understanding of the intimate relations of plant, soil, and moisture. Experiments covering every phase of this relationship must be carried on and the data brought together with painstaking care in order to determine exactly what the results will be under each set of conditions. It is impossible to lay down a few dogmatic rules to cover all cases since conditions vary much, and since a practice that would be economical under one condition would be wasteful under another. A shallow sand cannot be irrigated in the same way as a deep loam, nor should sugar beets and wheat have water applied in just the same manner. One method of irrigation gives certain properties to crops, while a different method gives other properties. The quality of the crop desired must help to determine the method of irrigation.

In the past, wheat has been raised extensively under irrigation, but it is probable that it will gradually be driven from the high-priced irrigated lands to cheaper lands where it will be raised largely by dry-farm methods. Doubtless some wheat will always be raised under irrigation in order to fit in rotations and because it is a convenient crop to raise; hence, it is desirable to obtain as much information as possible on the irrigation of this crop, partly as a means of conserving water for use on other crops.

Description of the Experiment

The experimental work reported in this article was conducted on the Greenville Experimental Farm two miles north of Logan, Cache County, Utah. It is a uniform loam to considerable depth and carries about 22 per cent of moisture as a maximum under field conditions.

The wheat plant was divided into four stages as follows: first, the stage when five leaves had developed and the plants were six or eight inches high; second, the early boot stage when the plants were just swelling preparatory to heading; third, the bloom stage when most of the plants were in bloom; and fourth, when the plants were in the dough stage.

A five-inch irrigation was used as a standard at these stages. An application of this amount was given at each stage, at each two stages, at each three stages, and at all of the four stages, thus giving quite a number of different combinations. It is possible, therefore, from the results obtained to determine which stages are best when

The Irrigation of Wheat

By F. S. Harris, Director of Utah Experiment Station.

either one, two, or three irrigations are used.

In the weekly irrigations, one plot received 1 inch, another 2½ inches, another 5 inches, and another 7½ inches of water each week during the season, beginning when the wheat was five or six inches high and continuing until it began to turn yellow.

During the three of the four years of this experiment, three manured plots were included. They received manure at the rate of 5, 15, and 40 tons to the acre respectively each year. These plots received 2½ inches of water each week; hence they can be compared with the unmanured plot receiving the same quantity of water.

The experiment was begun in 1912 and carried through 1913, 1914, and 1915, giving four years' results. Conditions during these years were made as uniform as possible in every respect.

Yield of Crop

Probably the most important consideration in connection with irrigation experiment is crop yield, since on this profits primarily depend. The relative yield of straw and grain is also worth consideration, the straw having considerable value, but not nearly that of the grain. The total yield of grain produced is doubtless the chief standard to use in judging the value of any treatment. Of course the expense attached to a treatment and the economy in the use of water must be taken into consideration in deciding what method of irrigation is best.

In reporting these experiments, the

results are separated into two divisions, (1) the plots receiving regular weekly irrigations and (2) those receiving water only at certain periods in the growth of the plants.

Figure 1 (See front page for this cut) shows the average yield of grain and straw for four years with no irrigation, and with weekly irrigations of 1, 2½, 5, and 7½ inches which total 9, 22½, 45 and 67½ inches of water respectively during the season. Where no water was added, there was an average yield of 37.3 bushels of grain to the acre and 4,043 pounds of straw. With the irrigation treatments the yields were as follows: for 1 inch weekly, 44.3 bushels of grain and 5,689 pounds of straw; for 2½ inches weekly, 44.6 bushels of grain and 6,757 pounds of straw; for 5 inches weekly, 45.8 bushels of grain and 6,250 pounds of straw; and for 7½ inches weekly, 43.5 bushels of grain and 5,794 pounds of straw.

It will be noted that 1 inch of water weekly produced almost as high a yield as larger quantities and the yield was higher than that for 7½ inches weekly. The least total straw as well as the least in proportion to grain was produced with no irrigation while the most straw, both absolutely and in proportion to the grain, was produced with 2½ inches of water weekly.

Figure 2 (See front page for this cut) shows the yield of grain and straw on the plots to which water was applied during various stages in the growth of the plants. It will be noted that no water was applied to

one plot, and that single irrigations of five inches were applied after planting the grain before it came up, and at the first, the second, the third, and fourth stages. There were also plots receiving two irrigations of five inches each at various combinations of stages, as well as plots receiving three and four irrigations. The reason for these various combinations was to determine the best time to irrigate wheat in case the farmer could give it but one, two, or three irrigations.

One striking thing about this figure is the relatively high yield on the plot receiving no irrigation. It will be remembered that the soil on which these experiments were conducted was deep and uniform and of a nature suited to the holding of much water. The precipitation for the four years of the experiment averaged 17.79 inches which was sufficient for a fairly good crop without irrigation.

The figure shows that the yields were decidedly reduced by watering the crop up. The plot irrigated at the fourth stage, when the wheat was ripening, gave a yield almost exactly the same as the unirrigated plot.

A careful examination of the figure shows the best yield for one irrigation to be when the water was applied at the first stage, and the best yield for two stages, when irrigated at the first two. Likewise the first three stages were better than any other three. Indeed, the highest yield of both grain and straw was obtained with fifteen inches of water applied during the first three stages. Irrigation at the last stage seemed in every case to be the least favorable time. That is, on a soil of this type, and under the conditions of the experiment, the early irrigations determine largely what the yield of wheat will be. Whenever the first stage was included with any other stage, the yield was always higher than if this stage was left out. Just the opposite was true of the fourth stage.

The economic considerations involved in these varying yields for different irrigations are discussed later.

Kind of Grain

The effect of various quantities of water applied weekly on the weight of 100 kernels of wheat and on the weight per bushel of the grain is shown in Figure 3. (See front page for this cut). The largest kernels in the weekly irrigation test were produced with 2½ inches of water; but the plot receiving no irrigation produced the heaviest grain per bushel, while that receiving 2½ inches of water each week produced the second heaviest.

An examination of Figure 4 (See front page for this cut) shows the same determinations on plots receiving five inch irrigations at various stages. The heaviest kernels were produced on the plots receiving five (Continued on page 7)

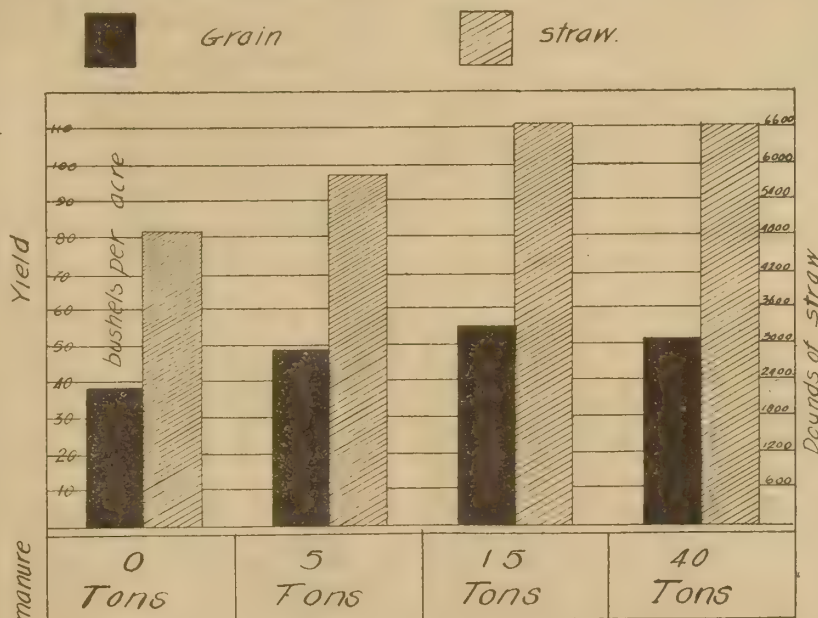


Fig. 7.—Effect of manure on the yield of grain and straw.

DAIRYING

PLEASURE AND PROFIT

Genuine Satisfaction in Successful Management of a Profitable Dairy Business.

Most people are interested in getting as much enjoyment out of their work as possible, yet comparatively few can devote all their time to pleasure seeking without thought of financial return. Some wealthy men have constructed beautiful buildings and placed fine cattle on their country places simply for pleasure and with little hope of ultimate profit. As a companion picture, the dairy experts of the department have called attention recently to the genuine satisfaction that is felt by the truly successful dairyman whose well-bred, well-fed cows are sheltered by a well-built modern dairy barn of moderate price, and whose business pays a fair profit on every invested dollar.

As a population increases, land advances in price, and dairying becomes more popular because the increased demand for milk, cream, cheese, butter, and ice cream enables the well-managed dairy farm to pay a profit, even on high-priced land. As in any other productive enterprise, successful dairying depends upon two great principles — economical production, and the successful marketing of the products.

Economical production of dairy products depends primarily upon the cow and upon intelligent feeding, care, and management. The unprofitable cow is a burden to the owner. One good cow often brings in more net profit than a dozen poor ones. The herd bull should be from a well-bred sire and a high-production dam, and only well-bred heifer calves should be raised on the modern dairy farm. If a bull of first-class breeding and good individuality costs too much, a number of neighbors may club together and buy a bull of better quality than any one of them alone could afford. In many localities bull associations have been formed to meet just such conditions. Dairying can never become highly profitable until the scrub bull is forever banished from our dairy farms. This includes the registered scrub.

If dairying is to provide either pleasure or profit, the unprofitable cow must be disposed of. The well-bred, high producer that takes her place must be properly and economically fed and cared for. Cow-testing associations have demonstrated that the feed of the dairy herd can sometimes be selected, balanced, and distributed among the individual cows in such a way as to decrease feed costs one-third and at the same time increase milk production.

No one should expect to derive either pleasure or profit from a scrub herd kept in a poorly lighted, unclean, and fly-infested stable, or from a herd which obtains its chief sustenance from a near-by stack of wheat straw. Fortunately such conditions are rapidly disappearing and in some localities have entirely disappeared.

Economy of production, however, is only half of the dairyman's problem. The truly efficient manager of a dairy farm must furnish a first-class product, then he must go a step further and get a price that corresponds to the quality of the article produced. High-testing milk should bring a higher price than low-testing milk, and it is not good policy to sell the former at a flat rate per hundred pounds, regardless of quality. High-grade dairy products should always command a price in accordance with their quality.

If a dairyman's business is well conducted it becomes highly interesting and fairly profitable. The successful dairyman drives his business, the business does not drive him; he does not merely keep cows, but makes the cows keep him. Such a dairyman may be expected to manage his farm so that he and his family can get both pleasure and profit therefrom.

SUGGESTIONS FOR HANDLING CREAM

Cool the cream each time after separating. Where ice is not to be had, place the can in a vat of cold water, preferably running water.

Never pour warm cream in with cool cream, as this practice will raise the temperature of the whole and encourage bacterial growth, causing the cream to become sour and develop bad flavors and odors.

When marketing, it is a good practice to cover the can first with a wet blanket and then with a dry blanket. This will help to keep the cream cool.

Grading cream is becoming more and more important. Frequently the



The Stingy Feeder Cheats Himself As Well As the Cow

"The cow requires not only materials for maintenance, but must also have protein, fat and carbohydrates to make milk from. The milk contains water, fat, protein, sugar and ash, and these are all made from the constituents of the food. If

insufficient protein, fat and carbohydrates are contained in the food given her, the cow supplies this deficiency for a time by drawing on her own body, and gradually begins to shrink in quality and quantity of milk, or both."

—Quoted from a recent Government Bulletin. Read more on this subject in our Folder "Feeding for Results," sent FREE on application.

Utah Cereal Food Co.
Ogden, Utah.



The Highly Nutritious, Perfectly Balanced Stock Feed.

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WALKER BANK BUILDING
SALT LAKE CITY

The deposits of this bank amount to more than \$7,000,000.

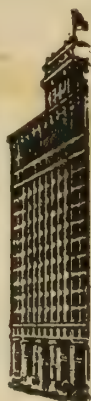
Increase during the past three months alone has been over \$700,000.

DEPOSITS

1912.....	\$3,200,000
1913.....	3,800,000
1914.....	4,500,000
1915.....	5,300,000
June 22, 1916	6,470,289
Sept. 22, 1916	7,197,364

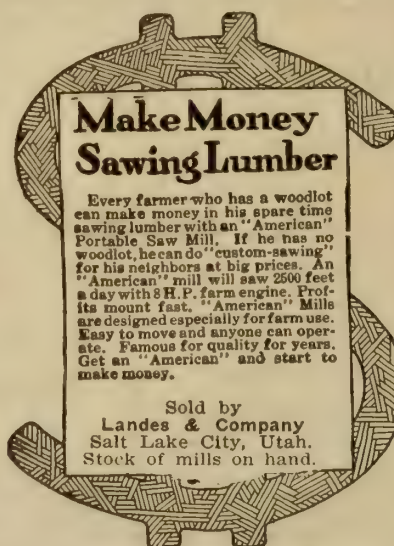
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Resources over \$7,800,000.
SALT LAKE CITY



prices vary from 3 to 4 cents a pound between properly and improperly handled cream.

Good cider vinegar may be made from surplus and poor apples.



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"Velvet" for Dairymen

A new book which describes a great invention—the only Separator that will skim clean under varying conditions of speed. Government tests prove that nineteen out of twenty separators are turned below normal speed, and with any other separator but a "Suction-feed" cream escapes in the skim milk.

Now, you turn that loss into profit without added expense. We call this new profit "velvet." Our new separator safeguards you from cream losses. No matter whether you turn faster or slower than the regulation speed, you always do perfect skimming with

THE NEW SHARPLES SUCTION-FEED CREAM SEPARATOR

At widely varying speeds it delivers cream of an even thickness that makes quality butter. Capacity increases as you turn faster so you can get through separating quicker when in a hurry.

The new "Suction-feed" has the same simple tubular bowl as the famous Sharples Tubular Separator. There is no mechanism in the Bowl—nothing to get out of order and no disks to wash. The entire machine can be taken apart and thoroughly cleaned in a few minutes.

The top of the supply can is 24 inches above the floor. You can fill it easily without hard lifting. The entire machine is so simply and sturdily constructed that it will do perfect work for years.

Note Especially:

1. The new Sharples insures from 5 to 15% more cream under average conditions, and often doubles profits.
2. Skims equally clean at widely varying speeds.
3. Delivers smooth, velvety cream of uniform density at all speeds.
4. Capacity increased by simply turning crank faster.

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COLLECTIVE ACTION AMONG FARMERS TO IMPROVE THEIR BORROWING CAPACITY

C. W. Thompson, U. S. Department of Agriculture.

What co-operation among farmers can do to improve their borrowing capacity at banks is thus described in Bulletin No. 409, "Factors Affecting Interest Rates and Other Charges on Short-Time Farm Loans."

"In some parts of the country where farmers, if they obtained loans at all as individuals, were compelled to pay very high rates of interest, plans have been tried out under which groups of farmers have been able collectively to establish improved relations with banks. In several localities of the Central Western and Rocky Mountain regions, farmers have formed temporary agreements under which they act collectively as guarantee associations for approved loans of members. The added security from these associations has enabled members to obtain loans at reduced rates of interest. Another plan, illustrated by what has been done in a Texas community, involves a temporary agreement between a group of farmers and a bank, but differs from the plan previously mentioned in that the added security consists of a reserve fund left with the banker. Each borrower allows the bank to retain 5 per cent of his loan for a reserve fund, which is held as a guarantee for all the loans made under the agreement and is returned to the farmers at the termination of the agreement.

"Under another plan, which has been employed in several communities of the Northwest, a group of business men agree to deposit a sum of money with a bank and guarantee the loans given to farmers for some specific and approved purpose. In all such cases farmers have been enabled to obtain credit on more favorable terms than usual.

"In a number of localities in this country, groups of farmers have organized co-operative credit associations or credit unions. Usually each credit union makes definite arrangements with some bank by which the latter acts as a depository and furnishes loans on specified terms. Thus one of the unions in North Carolina receives 3 per cent interest from its bank on deposits subject to check and 4 per cent on savings accounts left on deposit three months or longer, and pays 5 per cent interest on its loans from the bank. The credit union in turn pays its own members 4 per cent on their savings accounts and furnishes them loans at 6 per cent. Such a credit union not only accustoms its members to the use of check and savings, but also enables the members to obtain loans for approved purposes on better terms than they could obtain elsewhere."

HOGGING-OFF FIELD PEAS

That the hogging-off of field peas is a practical and economical method of harvesting the crop and feeding the hogs has again been demonstrated by the Animal Husbandry Department of the Agricultural Experiment station in an experiment conducted during the summer of 1916.

A plot of Canada field peas consisting of 3.88 acres was used for this experiment. The plot was divided into four lots. Lot I consisting of .82 acres, Lot II .84 acres, Lot III .70 acres, and Lot IV 1.52 acres. Lot I was used for 21 days by 14 spring pigs averaging 88.6 pounds and produced 373 pounds gain, an average daily gain

of 1.27 pounds; Lot II was used for 21 days by 26 spring pigs averaging 81.7 pounds and produced 790 pounds gain, and average daily gain of 1.45 pounds; Lot III was used for 21 days by 16 late fall pigs averaging 125 pounds; and produced 442 pounds gain, an average daily gain of 1.332 pounds; and Lot IV has been used for 28 days by 18 fall hogs averaging 160 pounds and has produced 605 pounds gain, an average daily gain of 1.20 pounds. (Data on Lot IV is incomplete since only approximately 60 per cent of the peas have been harvested to date.) Lot II was fed, in addition to the peas, rolled barley at the rate of two pounds per hundred pounds live weight, or a total of 1,163 pounds of barley. The barley was valued at \$30 per ton and the value of the amount fed was deducted from the returns of the peas per lot.

Valuing pork at \$9 per hundred weight (actual market value) the returns per lot are as follows: Lot I, \$33.57; Lot III, \$56.67, (after deducting value of barley); Lot III, \$39.78; Lot IV, \$54.45 (not full return since only approximately 60 per cent of the peas have been harvested.)

Comparing Lots I and II, it will be seen that they made a gain of 373 pounds and 790 pounds respectively, or an average daily gain of 1.27 pounds and 1.45 pounds respectively, Lot II making the greatest daily gain by .18 pounds and the greatest total gain by 427 pounds which can be accredited to the 1,162 pounds of barley fed. In returns Lot I made \$33.57 and Lot II \$53.67, a difference of \$20.10 in favor of Lot II. Hence it is evident of the advisability of using barley under the above conditions.

Comparing Lots I and III it will be seen that they made a gain of 373 pounds and 442 pounds respectively, or an average daily gain of 1.27 pounds and 1.32 pounds respectively. Lot III making slightly greater gains than Lot I. In returns, Lots I made \$33.57 and Lot III \$39.78, a difference of \$6.21 in favor of Lot III.

Placing the above figures on an acre basis Lot I made 454.9 pounds gain, returning \$40.94 per acre; Lot II made 940.5 pounds gain returning \$63.90 per acre (after deducting value of barley); Lot III made 631.4 pounds gain, returning \$56.83 per acre; and Lot IV to date has made 398.0 pounds gain, returning \$35.82 per acre. Of course this latter figure will be raised considerably when the work of Lot IV is completed. The average return per acre of all lots for the peas in the field is \$50.89.

It should be remembered that the hogs did the harvesting, thus reducing the labor of harvesting the peas and feeding the hogs, besides leaving the land in excellent condition for succeeding crops—C. W. Hickman, Idaho Exp. Station.


WHOLESOME RESTRAINT

A small boy astride a donkey was taking some supplies to an army camp in Texas not long ago, and got there just as a detachment of soldiers, preceded by a band, was marching past. The lad dismounted and held the bridle of the donkey tightly in his hand.

"Why are you holding onto your brother so hard?" asked a group of soldiers who were standing near and wanted to tease the country boy.

"I'm afraid he might enlist," said the lad, without batting an eyelash.

It is better far to be run down by a chauffeur than by an evil tongue.



THE RED LINE round the Top

THIS AUTO TIRE RUBBER SOLE outwears other soles 2 and 3 to 1.

"HIPRESS"

The Original Brown Rubber Footwear

Nothing beats the TREAD of an auto tire for wear. That's why every sole in "Hipress" Boots and Heavy Shoes is made of new auto tire tread rubber, tough as nails. No wonder over 5,000,000 pairs of "Hipress" have often outworn 2 (sometimes 3) pairs of other makes.

Because they're made like Goodrich Auto Tires—in ONE SOLID PIECE—"Hipress" won't leak, crack, peel or split open like others.

33,000 stores sell—and recommend!—"Hipress." All styles. The RED LINE 'round the top identifies the genuine. Be sure it's on the ones you buy.

The B. F. Goodrich Co., Akron, Ohio
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"STRAIGHT-LINE"
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A fit for every foot and—
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BETWEEN LOCAL POINTS.

This innovation has been established for the purpose of permitting residents in local O. S. L. territory to visit back and forth Sundays and during week ends.

Saturdays to Mondays—

—To encourage baseball games and other sports between different towns.

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Ask any Oregon Short Line agent for further details, or write,

D. S. Spencer, General Passenger Agent, Salt Lake City, Utah.

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Stephens of Denver will pay you higher prices for **Coyotes, Skunks, Muskrats** and other **Western Raw Furs** than you can obtain anywhere else on earth. **No Commissions** charged and we sell you **TRAPS AT FACTORY PRICES**. **Animal Bait, Guns and Supplies** at rock bottom prices. Large can famous Stephens Animal Bait, 50c. We are the largest direct buyers of raw furs in the West. Denver closest market for Western Trappers. Stephens personally grades all shipments, **saves you 25c** on express or parcel post charges and sends your money 2 to 10 days quicker. Write for **FREE Trappers' Guide, Supply Catalog and Game Laws**. Tells all about trapping and how to prepare skins for market. Will send fur price list, shipping tags and big illustrated book **FREE**. **STEPHENS & CO., 225 Stephens Bldg., Denver, Colo.**

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Are a man of energy and business ability, here's an opening worth consideration. There is a great demand for drilled water wells, and there's a large sure profit to the man with a **STAR DRILLING MACHINE**. **Portable—Steam or Gasoline**. Best by test. Low in price, high in practical worth. You can make it pay for itself and earn dividends all the time. Look into this! Sold on payment plan if desired. Our 140 page catalogue describes 21 different Star Outfits. Write us and we'll mail you this book which will point the way to money making. Write to-day. **Star Drilling Machine Co. 642 Washington St., Akron, O.**

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PRICES		Tires Tubes	
30 in.	\$8.00 \$2.30	38x4 in.	\$17.45 \$4.65
32 in.	10.85 3.10	38x4 1/2 in.	21.20 5.60
34 in.	12.75 3.20	38x4 3/4 in.	22.50 6.75
36 in.	15.75 4.20	38 1/2 x 4 1/2 in.	23.00 6.30
38 in.	16.70 4.35	38 1/2 x 5 in.	26.00 6.40

Other sizes not included in above list. Non-skids at 10% additional. Payment with order at above special prices, a 10% discount allowed on orders for 10 or more tires. All cash checks must be enclosed. These tires now and convinced of their very qualities. Sold direct to consumer only. Inclusive folder upon request. Write for it. **Double Service Tire & Rubber Co., Akron, O. Dept.**

THE IRRIGATION OF WHEAT

(Continued from page 3)

inches each at the third and fourth stages, while the lightest kernels were on the plat receiving an irrigation after the grain was planted before it came up. The heaviest grain to the bushel was on the plat receiving an irrigation each at the first, second, and fourth stages, while the lightest was on the plat irrigated only at the second stage.

Date of Maturity

The date of maturity of grain is rather important in regions having short seasons. Often ten days difference in the ripening period makes the difference between success and failure. Where this condition is found, it may be desirable to irrigate in the way that will hasten maturity almost regardless of yield.

Figures 5 and 6 (See front page for these cuts) show that in general the plats receiving the higher irrigations had longer growing seasons than those which were not irrigated or which received but little water. The unirrigated wheat matured in 117 days, while 128 days were required where either five or seven and one half inches of water were applied each week. All the plats receiving only five inches of water matured their wheat in less time than any of those receiving ten, fifteen, or twenty inches. This corresponds with the common experience of farmers that dry-farm wheat matures earlier than irrigated.

Effect of Manure

During the years 1912, 1913, and 1914, manure was applied to a number of plats in order that a comparison might be made with the unmanured plats. As already stated, 5, 15, and 40 tons to the acre were applied to the respective plats. These manured plats had for a number of years previous to 1912 been raising potatoes and had received the same quantities of manure that were applied to the wheat. All the plats received a two and one half inch irrigation each week during the growing season. For the three years there was an average of 9.67 irrigations each year, in which 24.18 inches of water were applied.

Figure 7 gives the results obtained in the manuring test. They show an average yield of 38.1 bushels of wheat with no manure, 48.1 bushels with five tons, 55.1 bushels with fifteen tons, and 51.4 bushels with forty tons of manure. Thus when compared with fifteen tons, the yield of grain was actually decreased when as much as forty tons of manure were applied every year. This is probably due in part to the fact that excessive manuring caused the straw to grow so rank that it lodged considerably and rusted.

The height of plants and the number of heads to the square yard were greatest with the most manure, but the length of heads, the number of kernels, the weight of 1000 kernels, and the weight to a bushel of grain were highest with 15 tons of manure. The unmanured wheat had more kernels to the spike than any receiving manure. The greatest gain in yield for each ton of manure was produced with five tons, which increased the yield two bushels for each ton of manure, while forty tons increased the yield only .33 of a bushel for each ton.

(To be continued)

Love will hold the boy on the farm but cold indifference will send him seeking solace in the city.



Hang Out A Line Of Holeless Hosiery

When you hang up the stockings on wash day and find them hole-worn and torn, you realize that instead of your well-earned rest, you have an evening's darning ahead of you. There's no need of so much darning. Buy Durable Durham Hosiery for the whole family, and on wash day you'll hang out a line of holeless hosiery.

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is made right in the heart of the cotton district from the best yarn we can make. It has heavily reinforced heels, toes and soles—always fits snug after every washing, and the tops can't be jerked from the bottoms. Every pair is made strongest where the wear comes hardest.

Our location, economical manufacturing conditions, and the fact that we are the largest manufacturers of this class of hosiery in the world, enable us to sell superior hosiery for the low price of 10, 15 and 25 cents.

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Fine Improved Irrigated Farm

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Fully Paid Up Water Right

in one of the best canals in the State. 160 acres all fenced and in cultivation.

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We guarantee every subscriber against loss thru dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

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Save your hay by using the pasture or field. If you will pasture the stock they will pick up a great deal of food.

Are you getting ready for winter? Don't wait until the first snow, before you look around to see what is needed. Mend the roof, nail on the loose board. Put what you have in the way of barns and outbuilding in good shape, so it will produce the best possible shelter for your animals the coming winter.

INSURANCE

Owners of this State know that we have a law under which a number of them in each county can organize for mutual protection? For a number of years the farmers in Box Elder County have been working together and saving a great deal of insurance money.

This should be a good subject for the farm bureaus and other organizations to discuss at their meetings.

Farmers should have insurance and there is no reason why they should pay excessive rates to private companies when co-operative insurance has proved a success.

We shall be very glad to supply information along this line to any one who is interested.

TAKE CARE OF TOOLS

In some branches of farming, the harvest is already completed. Every machine and imple-

ment, which is not in use, should be put under cover. Take a moment's time to thoroughly clean machinery; use little oil and grease.

With a little care the average life of farm machinery can be lengthened. The best machinery will wear out in time, but the life of any implement depends primarily upon the care it has received, and the facilities and ability of the farmer to do repair work. Adding life and usefulness to your tools and implements is increasing your profits. The short time necessary to properly care for and put away your implements will be well spent.

SCRUB SIRE NEVER PAYS

Several farmers from Utah County are clubbing together and will purchase some pure-bred sires. This is one of the best moves that could possibly be made by those interested in live-stock.

When we consider that the labor, land and feed is about the same for a scrub animal as it is for a profitable one, we begin to realize what a mistake it is when we produce an inferior grade of live-stock.

The scrub sire must go because the greatest profits can only be expected from live-stock of good quality under our new conditions. Cheap land is going, feed of all kinds is advancing.

The sire is often spoken of as half the herd. For this reason we should only have the best sires, whether we produce sheep, hogs or live-stock of any kind.

IRRIGATION OF WHEAT

The article which we give in this issue on the irrigation of wheat by Dr. F. S. Harris, Director of the Experiment Station, should be read and studied by every farmer.

Four years of experimenting has proved that some of our old ideas are not in accord with results obtained in this work.

It has often been said, if we have just a little water we must use it to "fill out our wheat," in other words, we must irrigate our wheat when it is in the dough stage. This experiment shows that best results with little water are obtained when irrigation is done when wheat is five to eight inches high.

Water is a valuable asset in Utah, and to know how and when to best apply it is a problem for every farmer. It is an individual problem because our soils and conditions are different on nearly every farm. In a general way they may be the same, to be best results, however, one must know the duty of water and understand his farm, as to how much and how often water should be applied to get best results. Carefully read this article and the one which will be in our next issue on the important subject of irrigating our wheat.

GOOD ROADS FOR WINTER

If you want good roads for winter, do a little work now in the way of cleaning-up and preparing for winter conditions.

This suggestion does not apply so much to turnpiked or graded roads as it does to the roads leading from the farm to the main traveled roads.

The brush and weeds along the roads sides should be burned. Ditches cleaned out so that drainage conditions of the roadway will stay good until the ground has thawed out in the spring. See that every culvert or ditch crossing be made clear so that water will be carried off.

When water is allowed to stand in pools and along the road sides, it greatly reduces the quality and usefulness of the road.

Smooth away the ruts and shape the earth and gravel roads so that water will run off. If not done now the roads will be in bad condition before spring.

Make sure you have good drainage along the roads before the wet fall season begins. Once it begins to freeze you will have a hard job on your hands to clean out ditches, destroy weeds, or drain roads to make them passable for winter use.

MAKING BORROWED MONEY PAY

Much has been said of late about supplying the farmer with borrowed money. It is surprising the number of renewals that are made in farm mortgages. This may be because the first loan is made for a short time from the bank, and in many cases the farmer has provided no "sinking fund" to met his obligations.

The new farm loan method of paying both principal and interest should help to overcome this condition. This method of installment payments will not be a heavy burden upon the borrower, and is a much easier method than to pay the principal off in a lump sum.

Farmers should not make loans, however, unless they can be made profitable. In other words, you must be able to produce in profits more than the interest you are paying. If you can do this it is profitable to use borrowed money. It is, however, poor policy to mortgage the farm unless it is an absolute necessity or can be made very profitable.

The government has again sent out a warning to everyone interested in the new federal land bank, that they will not make loans to any organization that is charging the farmers expense money in advance. In other words, the government proposes to see that promoters do not make money because of the new law.

EFFICIENCY IN STATE GOVERNMENT

While discussing the question of a reorganization of the different departments in our State government, connected with agriculture, we were asked the question, "Why doesn't the State have an organization for efficiency and economy just the same as any big institution would do? Do you suppose that any big, successful company would have so many boards and commissions as we have in this State?"

It is only a matter of about three months until our legislature will meet and the people of this State should demand of their representatives that they bring about some changes that will make for efficiency and economy. The reform must come, why not this next legislature?

A prominent politician the other day said, "How are we going to pay our political debts if you take all these boards and commissions from us?" The best way to have an efficient government is to cut down the elective officers, and greatly reduce the number of appointive officers, and make them responsible to run the government as a business institution is handled. Start this reform by sending to the legislature men who are pledged to these reforms, with back bone and common sense enough that they will not play into the hands of politicians, who are working for self interest.

Our taxes are being increased all the time, and the number of boards and commissions. Unrooting the office holder is a big job for any reformer. The reform must come, why not now?

**WHAT THE COW IS
DOING FOR WISCONSIN**
By Fred W. Merrill, De Laval Separator Company.

Wisconsin, the "Dairy Denmark" of America, is held up to the dairymen of the country as the model, the leader, the "to be patterned after" dairy State of the Union. It isn't to be wondered at, for carefully compiled statistics re-

veal to us that Wisconsin dairy products for the year 1914 were worth a great big round hundred million dollars.

During the same year the State produced a good many other crops—corn, wheat, oats, barley, rye, hay, potatoes, buckwheat, tobacco, grass, silage, timothy seed, fruit and miscellaneous crops, but no two crops put together would equal in value the dairy products of the State.

The best part of the story is that Wisconsin's dairy cows furnished the market and paid a high price for many of the other crops. The dairy cows in Wisconsin paid five million dollars for silage. They paid fifty million dollars for the grass grown on Wisconsin hills, and paid good prices for the grain and hay produced on Wisconsin farms.

In Wisconsin there are, on an average, nine cows to every farm, and they are kept on 160,567 farms.

The milk from Wisconsin dairy cows was made into approximately 180,000,000 pounds of cheese. The butter-fat yielded 131,000,000 pounds of butter, for which the farmers received throughout the year an average price of 27 cents per pound.

There are some truths to be gleaned from other sources and not to be found in tables of statistics.

A banker in Fort Atkinson made the remark not long ago that in thirty years' experience in that community he had never known a failure to occur among those sturdy German farmers, who had started out with the dairy cow and kept close to the business of dairying.

It isn't any wonder that Wisconsin ranks first in all the States of the Union in the percentage of farms occupied and operated by the owners; because men have not failed in their farm practices, and their profits have been such as to induce them to remain on the farm.

Statistics do not tell us directly and accurately how rapidly the soil fertility is being depleted and lost in those sections where wheat is king, but observations convince us that no state can rank ahead of Wisconsin in the manner of maintaining soil fertility and making the agriculture as profitable for the son as for the father.

Wisconsin ranks first in the number of silos that have been erected. If there is any one thing which indicates that a man knows how to feed livestock, how to utilize his farm crops in the most economical way possible, how to maintain the health and longevity of his herd, how to build up and improve his soil—which indicates in short that a man is a real dairyman—it is the silo on his farm. That Wisconsin ranks first in the number of silos is only another way of saying that Wisconsin is adopting the most permanent type of farming, which entitles her to front rank.

There is a reason for most things. I know of many sections of the country that are better adapted to dairying in every possible way than the best sections of Wisconsin, yet they are unheard of as yet. It isn't that time will tell, but if the right type of men get into those sections and get the right idea, Wisconsin will take a second place, and even go lower yet in the file of great dairy sections.

The reason Wisconsin ranks first is that—

"Behind it all is the schemer,
The thinker who drives things
through;

Behind the job is the dreamer,
Who makes the dreams come true."

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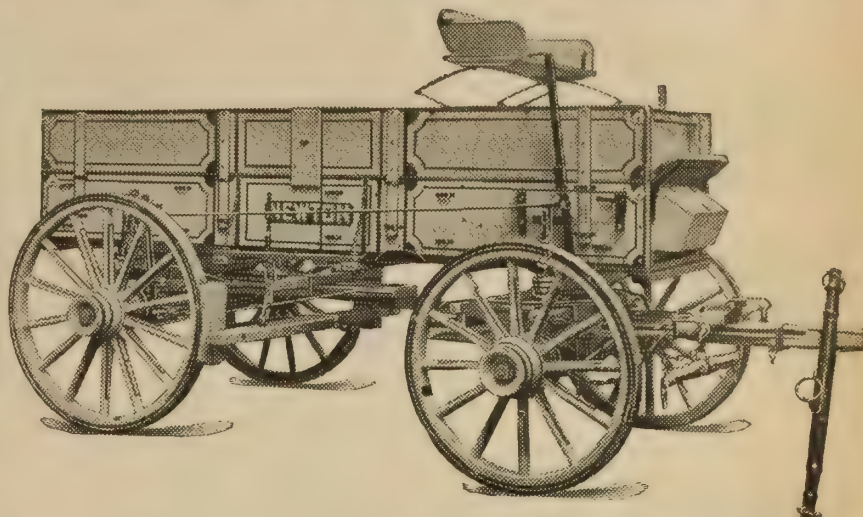
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MAYBE HE WAS SORRY

It was a beautiful evening and Ole, who had made up courage to take Mary for a ride, was carried away by the magic of the night.

"Mary," he asked, "will you marry me?"

"Yes, Ole," she answered softly.

He lapsed into a silence that at last became painful to his fiancée.

"Ole," she said desperately, "why don't you say something?"

"Ay tank," Ole replied, "they bane too much said already."

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HOME

CHOPPED PICKLE RECIPES

Chow-Chow

Take one-half peck green tomatoes, one large head of white cabbage, six large cucumbers (peeled), six large onions, and three heads of celery. Chop all fine, sprinkle with salt and allow to stand over night. Next morning drain and put on with one gallon of vinegar add two large red sweet peppers, chopped fine. Add spices to taste, one tablespoon of celery seed and one-half pint of sugar. If the vinegar is very strong, thin it a little, in which case less sugar will be needed. Constant testing is necessary to get the seasoning to suit individual tastes. If more vinegar is needed, add it boiling hot. Cook about half an hour and can.

Corn and Cabbage

Scrape the corn from twelve ears, and add as much cabbage chopped fine. Add one large red pepper cut in small pieces, one pint vinegar, one cup sugar, one tablespoon ground mustard, and salt and other spices to taste. Cook thoroughly and seal.

Cauliflower Pickles

Break up three heads of cauliflower and prepare as for cooking. Take one large onion chopped fine, two dozen cucumber pickles that have been previously made by some good recipe one stalk of celery, and one chopped red pepper. Cook your cauliflower, pepper, onion, and celery in one quart of vinegar, and when almost ready to take from the fire, add the chopped pickles. Season with salt, pepper, a small root of scraped horseradish and one tablespoon of mixed spices. If the vinegar is very strong, add one-fourth cup of sugar.

Green Tomato Pickles

Peel and chop the tomatoes very fine, salting over night. A good way is to cut them in coarse slices and salt well. In the morning drain and chop, as they will not be as mushy if chopped fine and then salted. To each half gallon of tomatoes allow two tablespoons mixed spices, and one quart of vinegar, one cup brown sugar, one tablespoon ground mustard, salt to taste. If liked, a little whole mace and cloves and bits of cinnamon stick may be added just before canning to add to the looks of the pickle. Cook well and seal as any fruits are put up.

SWEET PICKLED PEACHES

Four pounds peaches, 1 cup vinegar, 1 tablespoon cinnamon, 1 tablespoon clove, 2 pounds brown sugar, 1 tablespoon ginger, 1 teaspoon salt. Boil the sugar and vinegar. Scald peaches to remove skins and cook in syrup with spices in muslin bag until the fruit is tender. Keep in stone jars in a cool, dry place. If at any time mold is discovered upon the surface of the syrup, remove it carefully and scald the pickle immediately. It is wise to carefully inspect all pickles and preserves not sealed. The damp, warm weather incident to dog days furthers the growth of mold and bacteria. Therefore, too much caution cannot be exercised in the care of the preserve closet during this period.

SWEET PICKLED PEARS

Six pounds pears (not to ripe), 3 pounds sugar, 2 cups vinegar, 4 tablespoons whole cloves, ¼ cup mixed spices in muslin bag. Wash pears, but do not cut them. Stick the cloves



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Milwaukee, Wis.

into the fruit, and cook in syrup with spice until tender. Place in stone jars and care for as directed for peaches.

THE FOLLY OF FEAR AND WORRY

A Japanese parable tells of a man who is cruelly tortured by a demon. Not understanding the injustice of his frightful punishment, because he feels he has never done anything to merit

it, the man calls on the demon to explain why he is so persecuted. The demon replies, "Thou hast created me and fashioned me to be such as I am. My nature is such as thou hast given me. Blame then thyself for thy suffering."

We ourselves fashion from our thought the hideous demons of fear of worry, of unhappiness in some form,

RELIABLE FARM BARGAINS.

acres at American Fork at \$96 per acre. The place is now planted to potatoes, alfalfa and orchard. The soil is of a sandy loam, and ample water from the Lehi Irrigation company. Four-room frame house; stables and other outbuildings. Will give excellent terms on this property or will exchange for Salt Lake residence property.

acres near Elwood, Bear River valley. This place is now planted to grain, alfalfa and sugar beets. It is on the main county road, and can be had at \$115 per acre. Good terms.

acres in southern Idaho. All under cultivation, with four-wire fence, half a mile from state highway. Has full water right from the canal, which furnishes 4½ acre feet water each season. This is an exceptionally good buy at \$85 per acre. Easy terms.

acre on 5-cent car line at \$50 down and \$50 a year, 6 per cent interest. Price \$450.

acres on Fifth East between 15th and 16th South, with 5-room brick house, flowing well, chicken coop, and other outbuildings. This place is now planted to alfalfa and lies well for subdividing. Price \$4200; \$500 down, very easy terms on the balance; or will exchange for Salt Lake City residence property.

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UTAH-IDAHO SUGAR
ABSOLUTELY PURE

which tortures us and frequently wrecks our lives.

Fear and worry have wrought more destruction in human lives than all the wars that have devastated the world since the birth of the race. No one can estimate the havoc these happiness-killers, these efficiency-destroyers, continue to play in our lives! They chill the heart, whiten the hair, wrinkle the face, and take the elasticity out of the step; they blight ambition, kill courage, strangle hope, and leave us wrecks of our former selves. They are the fatal enemies of everything for which human beings strive—health, power, success, and happiness. They are among the most unfortunate heritages of the race, for we are born into an atmosphere of fear and worry. We come into the world stamped with anxiety, marked with fear, and a dread of the unknown.

For thousands of years it was thought that the terrible power which caused the thunder and lightning, the tornado, was some great enemy of man, an angry god who hurled his thunderbolts to earth. And the wrath of the angry god of the thunder and lightning, of the tornado, must be propitiated even by the sacrifice of human life. The fearful storms at sea, the typhoons which wrecked ships, were outbursts of the wrath of the great sea god, Neptune. The eclipses of the sun and the moon indicated the displeasure of other gods and multitudes of human beings were sacrificed in all sorts of cruel ways to appease these terrible powers which were supposed to rule men's destinies.

The gradual elimination of these crude forms of fear has been one of the most interesting things in the development of the race. Knowledge has swept aside the terrors of the unknown, and when we are sufficiently advanced to realize that our God is a God of Love, and that love is law, order, harmony, all the fear brood will disappear.

Unfortunately, multitudes of people are still held down by some form of our primitive heritage. The perpetual presence of fear stunts their growth, strangles their normal expression and warps their development. Fear is stamped upon their brains from childhood. How many mothers ignorantly try to force their children to go to sleep by frightening them, telling them that if they don't go right to sleep a great big bear will come and eat them up and so on. How much sleep would a grown person get in a situation which seemed as real to him as such a picture suggested by its mother is to the child? Yet the majority of parents continue to people the darkness with all sorts of cruel monsters in order to frighten children into obedience. If they only knew how injuriously a child's physical and mental development is affected by such a brutal system of terrorization they could not, would not, be so cruel. The lives of many children, especially those who are sensitive, are sadly marred, if not completely ruined by it. A great medical authority says that at least eighty per cent of morbid children could have been saved from their defect by the application of common sense principles of scientific and physiological hygiene in which the main factor is suggestion inspired by wholesome courage.—Pictorial Review.

The raspberry patch should be cleaned up. Old canes should be pruned out and burned. Perhaps they contain insects or disease. Fire will help to cure these troubles.



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That long drive through the biting zero winds will be lots pleasanter if you know there's a Caloric furnace keeping the house warm. A Caloric will hold the heat for hours. You can step from the icy outdoors into a comfortable kitchen and be warmed in a jiffy. Every room is uniformly warmed. You are saved the muss and fuss of stoves at no additional cost because the



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Field and Farm

ALL ABOUT AN APPLE

By Dr. Benjafield, Hobart, Tasmania.

As both food and medicine an apple is a wonderful example. Professor McAlpine gives us this digram, of which the following is an explanation in pure English; Suppose this apple to be the size of a large breakfast cup and into this cup you put nearly half a pint of water and stir into it: of concentrated food like that contained in an egg, half a teaspoonful; of fatty stuff like butter, a little less than half a teaspoonful; of sugar, both cane and grape sugar, two tablespoonfuls; of mineral matter, as much as will lie on a sixpence; of acids, a little more than half a teaspoonful; of skin and core, a little more than two-thirds of a teaspoonful.

From a medical point of view we look upon each of these elements as follows: The food or protein is pure and strengthening and exists in the apple combined with sugars and acids, and when taken it enters rapidly into the muscles, where it is readily broken up, imparting heat and strength, so that the athlete, under great exertion, soon gets the stimulus.

The fatty matters are so beautifully combined with acids that even the most delicate child does not recognize that he is taking fat when he is eating an apple.

The sugars or carbohydrates form

the most attractive element, as they are the most nourishing part of the fruit. And these sugars are just crystallized sunshine and are far more digestible than any ordinary sugar. The child, from babyhood, just loves it and it is excellent food for him. In the adult, especially in advanced age, ordinary chemically-prepared sugar when taken freely produces rheumatism, gout and such like diseases, but these sugars never set up any of these troubles; indeed gouty people get relief from eating fruit.

The mineral matter in the apple is one of nature's wonders. The blood must keep its red color or it cannot do its work in the body and we die, and this red color depends on the presence of iron. When we eat an apple we eat just the right dose of iron which the blood needs, and the invalid with poor blood will get iron in the apple which is far more easily absorbed by the blood than in any preparation of iron compounded by the chemist.

Lime is found in the apple in the same form as it is found in our bones, and in the apple the lime is so beautifully combined with phosphoric acid that, when an apple is eaten, the bones of the body are nourished by these lime salts, and by these additions of lime the child is able to build up the young growing bone. Ricketty children have bones deficient in lime. I have never seen Rickets or soft bones in a Tasmanian orchard.

Magnesia.—Yes, nature has placed in the apple quite a nice little dose of magnesia and it helps to keep off rheumatism by purifying the blood and assisting the bowels.

Phosphorous. — Professor Schaffer told us recently in the great scientific lecture of the year that life could not exist without phosphorus, and in the apple this great nerve tonic exists in quite a full dose and it exists in its most soluble form as phosphoric acid.

Sulphur, as sulphuric acid is also a great blood purifier and has an especial effect on the skin and skin diseases.

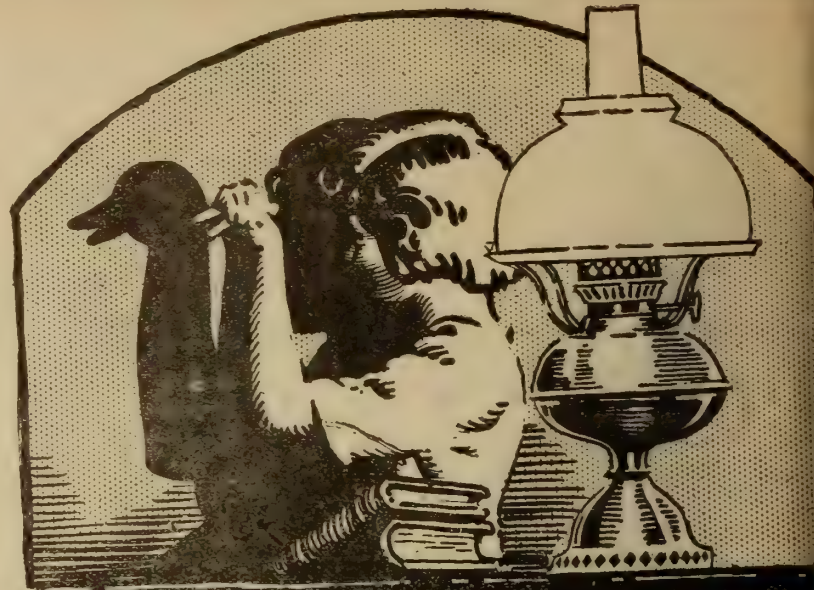
There is just one more thing which science has not yet explained, and that is the wonderful life processes by which all these tasteless (some even nasty) elements were blended together into a beautiful fruit and perfect food.

The sailor who lives a long time on salt meat and biscuit alone will rot with scurvy, and if he takes the sugars, acids, etc., contained in an apple every day separately he will still die, but if he takes an apple a day his blood will keep perfectly right. This shows there is life in the apple apart from just its chemical composition.

The bee loves honey because its nature cries for a perfect food, and for the same reason the child cries for an apple. Its digestion is assisted by it, the blood is made richer, the muscles are made stronger, the bones are made harder and the dose of phosphorus stimulates the nerves and feeds them until it wants to run and romp in exuberant life. Ask our men in the trenches what they would give for a good feed of apples.

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"How else can I get it?"



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Easy to clean—lighted without removing the chimney. At all dealers.

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OFIT AND NUMBER OF ACRES
The size of business often has much to do toward making the farm profitable. Farm management records show that farms are often either too small or too large for the most successful farming. There may be too few as well as too many acres. A man may have enough land or he may be "land poor," thereby rendering all his efforts unprofitable. About 30 years ago a Wisconsin farmer with a large family was deep in debt. His farm consisted of 120 acres, half of which was under the plow. The remainder was woodland and was expensive to clear. For 12 years

the farmer had not been quite able to meet his interest. To him the whole farm consisted of unprofitable acres. He finally decided that the farm was too small for the most efficient use of the labor available. Having an opportunity, he bought an adjoining 80 acres of cleared land, going in debt for the full amount of the purchase price. From that time on the farm was prosperous, and in 10 years the entire farm was paid for and enough additional money saved to build a good house and barn. During this period there had been no great change in prices of farm products. The smaller farm had been unprofitable because the overhead expenses were too high for so small a business. In this case acres were made profitable by increasing their number.

In the early nineties a North Dakota farmer owned 3 quarter sections of land. His farm was quite heavily mortgaged and for a number of years he had not been able to pay interest in full. His family was small and for most of the work he had to depend on hired help. He concluded that under the circumstances he was working, or trying to work, too many acres. Finally, he sold a quarter section and paid his debts. Seven years later he had \$5,000 in the bank. Increased prices of farm products during this period only account in part for this farmer's increased prosperity. In this case all the acres had been unprofitable largely because there were too many of them.—J. C. McDowell.

HOW TO KEEP THE RATS AWAY

One good cat around the average farm is sufficient. Feed it a little milk at the barn at milking time, but let it rustle for its meat ration. In addition to your dog and cat, trap wherever you can, and if necessary use poison. First place some food without poison where the rats will find it. Do this a few times, and after they are used to it, add the poison.

Other things which help in keeping rats and mice under control are buildings erected in a rat-proof manner. Metal and tile corncribs are well worth considering if you are going to build a new one. To make an old granary proof against these pests you can put jacks under it and set it up on concrete blocks. Small grain-rooms may be lined with small-mesh wire netting. B. J. Lloyd, surgeon of the United States Health Service, says that rats annually eat up foodstuffs worth \$100,000,000, and that rat-proofing a building is as important as making it fire-proof.

The poultry business especially suffers from rat depredations, and I have known people to be driven out of the business because they were unable to protect their young chickens from rats which would burrow up under the coops. If the time and energy expended in nailing little pieces of tin over holes were employed in making cement floors, such conditions would stop.—Farm and Fireside.

BREAKAGE OF JARS IN CANNING

When breakage of jars occurs it is due to such causes as—

- (1) Overpacking jars. Corn, pumpkin, peas, lima beans, and sweet potatoes swell or expand in processing. Do not fill the jars quite full of these products.
- (2) Placing cold jars in hot water or vice versa. As soon as the jars are filled with hot sirup or hot water, place immediately in the canner.
- (3) If top cracks during sterilization the wire bail was too tight.

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Piano Organ Voice Violin Band Instruction Dramatic Art

(4) In steam canner having too much water in the canner. Water should not come above the platform.

(5) Allowing cold draft to strike the jars when they are removed from the canner.

(6) Having wire bail too tight, thus

breaking the jars or glass tops when lever is forced down.—States Relations Service.

—O—
"I'm digging a well for exercise."

"How are you getting on?"

"Fine. Drop in on me some day."

RAPPERS

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Your success depends on the fur house you ship to. Start right. Ship your first lot to us. Our returns will convince you. Write today for our free book, "Fur Facts," Price List, Tags and prices on Traps, Baits, Supplies.

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Salt Lake City, Utah.

POULTRY

BAD EGGS LOSE UTAH FARMERS \$20,000 ANNUALLY

Relative Market Value of Fertile and Infertile Eggs Demonstrated.

That the farmers of Utah lose \$20,000 annually due to bad eggs, is the startling statement made by the Poultry Department of the Utah Agricultural College, and illustrated graphically last week at their exhibit at the Utah State Fair. While this is but a small part of the \$45,000,000 lost yearly in the United States, due to the same cause, still it is large enough to cause serious action looking toward its avoidance. The specific causes of this loss are given as follows: (1) There is little interest taken in Utah at present in the production of eggs of special grade; (2) No attempt is made to grade eggs at the shipping point; (3) Carelessness and indifference as to the handling of eggs is shown by many producers; (4) There is little or not difference in price for the producer between good and questionable eggs; (5) Poor methods of packing and shipping are in vogue; (6) There are no laws to prevent the selling of eggs of an inferior grade; and (7) Fertile eggs, quick to spoil in warm weather, are produced in the summer.

To offset these evils, the following specific remedies are proposed; (1) Greater production of egg is necessary, with more interest shown in their production; (2) Dealers should buy eggs by the "Loss off" method, rather than by the case; (3) Hens should be given plenty of room, fresh air, good food, and clean nests; (4) Eggs should be gathered twice daily, kept in a clean, dry, cool place and marketed twice a week; (5) Laws to prohibit the sale of eggs unfit for food should be passed, and (6) The male bird should be sold, killed, or confined away from the hen during the summer and fall, thus insuring infertile eggs.

Of the \$45,000,000 lost annually to the poultrymen of the United States, one third is caused by the spoilage of fertile eggs. Nearly twice as many fertile eggs are lost annually as infertile. At the College poultry exhibit, a series of fourteen vessels, each holding the content of an egg, shows clearly the relative keeping qualities of fertile and infertile eggs. These vessels are arranged in two rows, of seven each. One row contains fertile, the other infertile eggs. In the first pair of vessels are placed strictly fresh eggs. The second pair contain eggs that have been in incubation one day, the third, two days, and so on, until we see in the last pair, eggs that have been in incubation for one week. Throughout this week the infertile egg started to turn bad after the first day, by the second day it was unfit for food, by the end of the week it was nauseating. Every house is a potential incubator in summer. Development starts to take place in a fertile egg at sixty-eight degrees, and there are few summer days not warmer than that.

FANCY VS. UTILITY POULTRY

"If we judge by the recent past, we can look forward in the development of the poultry industry to a rivalry between two classes of breeding now known as the fancy and utility. That there is such a rivalry, and that in some quarters it is an unfriendly and bitter rivalry, is to be regretted. From the standpoint of the so-called utility breeder, I can see much of good that has been accomplished by the fancy breeder and more to be accomplished. I seriously doubt if we would have our pure breeds today, if it had not been for the persistent and painstaking, skillful work of the fancy breeder. His work has in the past, and will in the future, be the cornerstone for the utility breeder to build upon. The time has come, or is near at hand, when the progressive fancy breeder may be required to resort to the trap nest to add another quality—that of inherited capacity for egg production, to the other qualities sought to be produced. While I believe that such a quality can be added to a strain or bred into it, or developed out of it, I am not wholly satisfied that such is the case, and that an excess of strength and vitality is not the explanation of the greater egg records made by some of the pens in the different contests; but when this claimed fact of inheritance once becomes permanently established as a fact, if ever it does, you will see the names of the country's greatest breeders in the lists of laying contests, where they are now so conspicuous by their absence.

"Nor can the fancy breeders be blamed for not rushing into the laying contests till they have had a reasonable time to try out the question of

(Continued on page 15)

Help Your Molting Hens They Will Pay You Back

Hens can't lay when molting; they are too busy making feathers. And at this critical time they are in danger of contracting disease because of weather changes, lack of plumage and weakened condition.

Help them now. Quick action is needed. They will pay you back in dollars and cents.

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will help a lot, too. Used in stormy, cold weather as a preventive, it will keep the flock free from troublesome colds, roup and similar disorders. If these troubles have already appeared, Pratts Roup Remedy will save the birds. Roup hens will not lay, and will give the disease to the rest of the flock.

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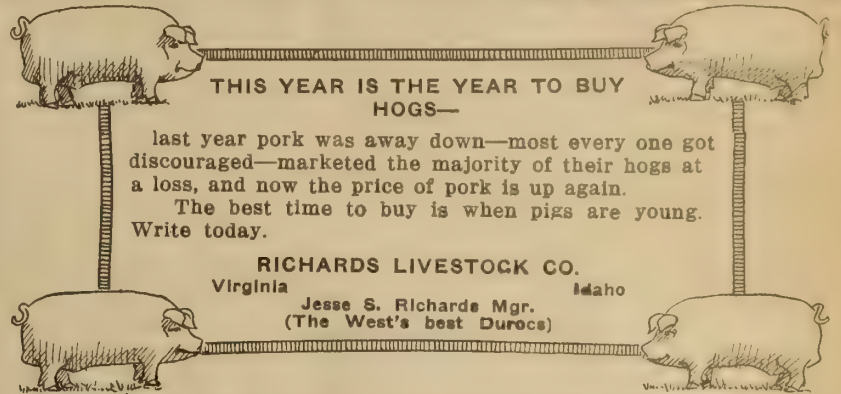
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FANCY VS. UTILITY POULTRY (Continued from page 14)

whether or not the hen can be as truly bred for production as the cow is bred. If the time comes for them to produce by their skillful breeding hens that can lay eggs as well as carry a certain shape and sport fine feathers, I believe they will produce beauty and utility so combined that the fascination for poultry husbandry will be upon a surer and safer foundation than at the present time. When these fanciers produce the hen of combined beauty and utility, they will offer no excuse that the trapnest produces green shanks or lavender ear lobes or the shape of a duck.

"I believe that there is no reasonable ground for the differences that appear to exist between these two classes of breeders and hope that the time may come when all lines of dif-



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ference will be eliminated and every breeder will be both a utility and fancy breeder and that these adjectives may be dropped; that the breeder who wins the ribbons for form and feathers will, with birds of the same breeding, be found among the leaders in the egg-laying contest.—From address of Judge F. M. Peasley at Connecticut State Poultry Association.

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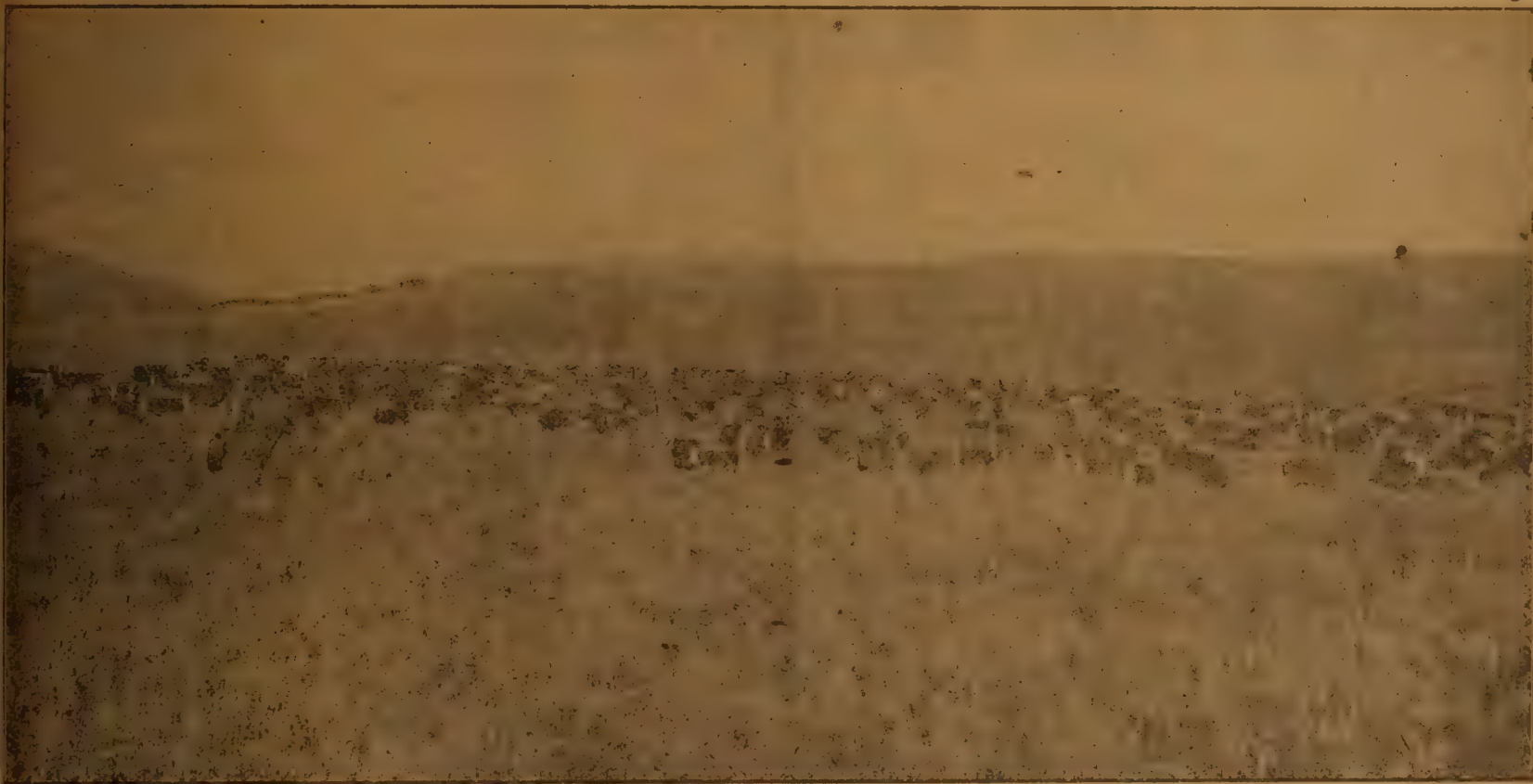
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VOLUME XII; No. 12

LEHI AND SALT LAKE CITY, UTAH

OCTOBER 21, 1916



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The Irrigation of Wheat

By F. S. Harris, Director of Utah Experiment Station.

(CONTINUED FROM LAST WEEK)

Producing Power of Natural Precipitation.

Irrigation at best is only supplementary to the rainfall; the greater part of the water used by crops usually comes from natural precipitation which falls during the growing season

where only five inches of irrigation water were applied.

Economic Considerations

(a) Water spread over different areas. The importance of using irrigation water economically to supplement the natural precipitation is

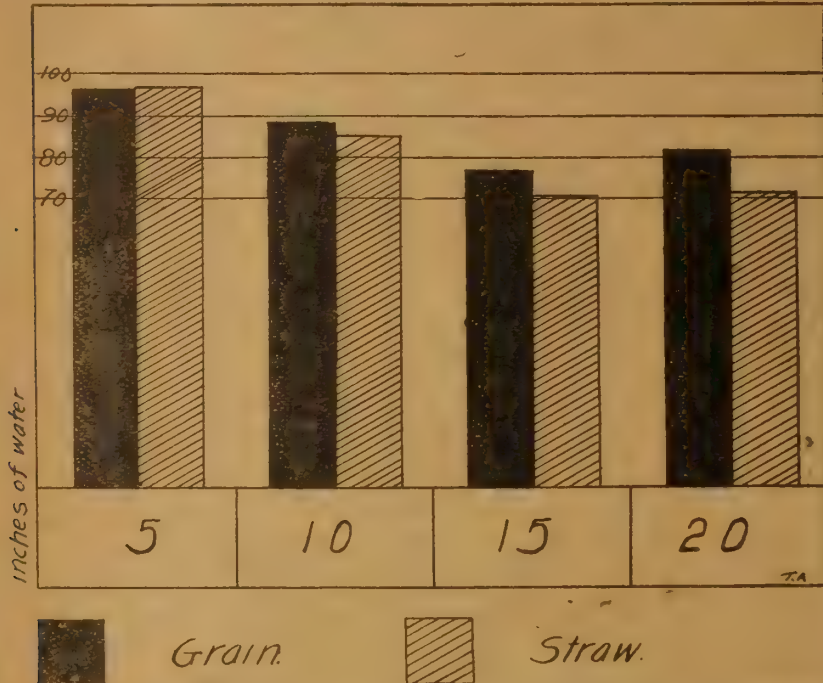


Fig. 8.—Percentage of the yield of wheat produced by the natural precipitation with different quantities of irrigation water.

or is stored in the soil. Irrigation water should be applied in such a way that it will use the rainfall to best advantage. Figure 8 shows the percentage of the entire crop that is produced by the natural precipitation. In determining this, the yield of the un-

brought out in Figure 9.

The total crop produced by the natural precipitation in conjunction with 20 acre-inches of water where it is used on one acre, one and one-third acres, two acres, and four acres respectively is shown. The total yield

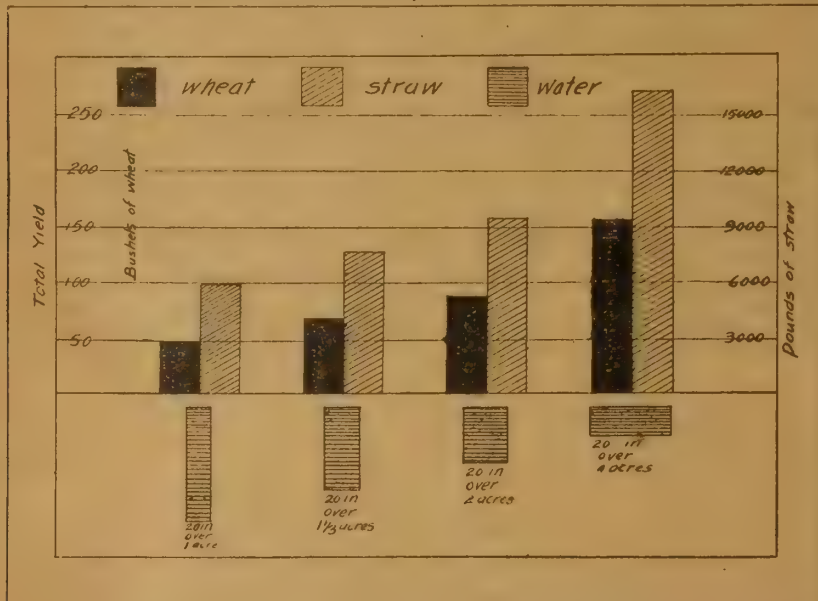


Fig. 9.—Amount of wheat produced by twenty acre-inches of water when applied to one acre, one and one-third acres, two acres, and four acres of land.

irrigated land was taken as the standard for the crop produced by the unsupplemented rainfall and from this the percentages were computed. In every case over 75 per cent of the crop was produced by the precipitation while over 95 per cent was produced by it

was more than three times as much where 20 acre-inches were used on four acres as where the water was all applied to one acre.

(b) Increase in yield for each acre-inch of water. Where water is scarce (Continued on page 14)

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VOLUME XIII.

LEHI, UTAH, SATURDAY, OCTOBER 21, 1916

No. 12

Dairy Herd Improvement

By J. E. Dorman, U. S. Dairy Division.

Every dairyman has an opportunity to improve his herd. Some very high records have been made during the past several years. One cow, according to reports, has made over 1200 pounds of butterfat in twelve months, and several more have made over 1000 pounds. Yet the average cow in the United States makes only 150 pounds. The high records made, of course, are exceptional records, but they are the results of systematic breeding and feeding. Several herds, made up of a number of cows, have made an average of 500 to 600 pounds of butterfat in twelve months. These, too, are the results of constant selection, intelligent mating of the animals, and judicious feeding.

We should then start out with the idea that if we wish to improve the class of cows we must put some study as well as work into the business. The improvement of animals or plants must be gone about in practically the same way; that is, the selection and breeding of individuals and not by the herd or acre as a unit. To improve the efficiency of his herd should be the constant aim of every progressive dairyman. The best evidence of a progressive spirit in the dairyman is the fact that he is trying to weed out unprofitable cows. No matter how modern or convenient barns and equipment on the farm may be, the dairyman may still be rated second class if he neglects the producing end of the business. I have known dairymen who spent a great deal of time and considerable money trying to raise the selling price of their dairy products a few cents. I have no fault to find with the producers who endeavor to secure the best possible markets, but upon investigation it has been found that the same time and energy spent with the herd would yield much greater profits by lowering the cost of production.

It is a fact that few business methods are in force on many of the dairy farms—no systematic way in which the owner can tell how much or how little he is making on the operation of his dairy. The fact that he knows a general way that the herd is a source of profit is not an excuse for lack of business methods, but goes to show the great possibilities of dairy farming if carried on in a businesslike manner. Perhaps there is no other business in the world that shows a greater range of profits than does dairy farming. Investigations made a few years ago by one of the leading farm papers, and verified by the United States Department of Agriculture, showed men in the same community, selling their products in the same markets and having an equal chance in

every way, who had returns ranging from \$60 per cow per year profit down to an average of \$4 per year profit. Here in the Northwest we find some herds bringing in an average of \$70 or more profit per cow per year, while others are barely paying a market price for the feed consumed. This wide range of profits rarely exists in other lines of business and it seems that it is fairly good evidence of a lack of business methods. Dairy farming is one of the most profitable branches of agriculture if properly managed. It requires the highest degree of skill and the closest application

only three gallons per day she does not impress the dairymen as being a good cow. Yet if she produces only an average of two gallons per day and keeps it up for ten months she will give more than 5,000 pounds. It is possible then to give too much credit to the five-gallon cow. The dairyman may jump to the conclusion that she is the best cow, and probably she will be dry at the end of six months and fail to reach the point of profitable production. The only safe basis then for judging a dairy cow is a twelve-months' record of her production.

All dairymen will agree that there



A Convenient and simple way to tie the bull so he can have exercise. The long pole is balanced, an iron pin going through pole into upright post allowing animal to walk around.

to details to make it successful. The Dairy cow will take the raw material grown on the farm and convert it into a finished product that has a market value at all times, and still leave the fertility on the farm which increased the value of the land. The profits resulting will depend largely on the class of cows kept and on the skill that is exercised in feeding and handling them.

Successful herd improvement then must necessarily follow these lines: (1) weed out low-producing cows, (2) breed to a sire of known producing ability, and (3) feed intelligently.

Weeding.

Many dairymen know in a general way the best milkers in their herds and in a general way try to eliminate the unprofitable cows. But they are often mistaken in placing them if no system of records is kept. Because a cow gave five gallons of milk when she was fresh is not a guarantee that she will give 5,000 pounds in a year. But if another cow coming fresh gives a great difference in the producing

qualities of cows, but until the daily records of both feed and production are examined, no one can appreciate what these differences mean in dollars and cents. Until it is known what a cow is doing, intelligent feeding is impossible. No merchant could sell goods indiscriminately and continue in the business unless he knew what the goods cost. The dairyman sells his feed to the dairy cow and expects a profit in the transaction. It is, therefore, good business policy to know what kinds of cows he uses for the purpose of manufacturing feed into dairy products. The more efficient the cows are in this respect the greater the profits.

Many dairymen are of the opinion that the equipment to keep these records costs too much, the test is too complicated, and that it requires too much time to keep the records. If this were true there might be some excuse for not doing it, but since the total investment need not exceed more than a few dollars this should not stand in the way of herd improve-

ment. A spring balance, made especially for the purpose, will cost about three dollars, a Babcock tester from four dollars up, and the record sheets can usually be secured at very small cost, or sometimes from the Agricultural College at no cost whatever. The test is very simple and can be learned by anyone in a few minutes. The time needed to do the work amounts to very little. If a dairyman does not wish to do the work himself, he can become a member of a cow-testing association, which hires a man to do the testing and keep the entire records of the herd at small cost. These records can be used as a basis for (1) intelligent feeding, (2) the elimination of cows that do not pay for their feed, (3) designating the cows from which the heifer calves should be saved, (4) keeping a check on the milker who may be careless or inefficient in milking, and (5) determining whether the bull is of the quality that will improve the class of stock in the herd. These records should show the amount of milk produced by each cow in twelve months, the percentage of fat in the milk, and the cost of the feed consumed. The difference in the value of the dairy products and the cost of feed will give the net profit or loss.

Cow-testing in Sweden in ten years increased the profits per cow nine times what they were before testing. In Minnesota, where a cow-testing association has been in operation for two years, they showed an increased production per cow of from six to 51 pounds of butterfat per year. The average increase of the cows remaining in the association at the end of the second year was twenty pounds, at thirty cents per pound this means that the profits were increased \$6 per cow. The cost of keeping these records in the association was \$1.50 per cow. The history of this systematic method of keeping records is that the average production can be greatly increased each succeeding year as the low-producing cows are eliminated and better methods of feeding are introduced.

Breeding.

When we have these records and know that we are feeding properly and in sufficient quantity, further improvement must be looked for through the sire. The improvement made in the future herd can be measured by the degree of quality secured in the bull. The price should not always be considered in the selection. Many dairymen select young bulls because they are cheaper, but for the inexperienced breeder it is safer to pay a little more and get a bull of known quality. Breed-

(Continued on page 4)



She's The Money Cow

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The American Jersey Cattle Club
387 West 23rd Street - New York City

DAIRY HERD IMPROVEMENT

(Continued from page 3)

ing determines the cow's characteristics, her efficiency in producing milk. The great factor in the breeding then is the sire. Surveys taken from farms brought out this fact clearly. The farmers in Illinois who used pure-bred sires made a net profit of \$83 per year. Farmers using grade sires made a net profit of \$439 and the farmers using scrub sires made a net profit of \$178. These figures were taken from the farmers themselves.

Feeding

This question is a most important phase of dairying, and requires good judgment and close observation. Insufficient feed makes a good cow a scrub. Some cows can not make milk economically no matter what they are fed. Other cows will convert all the feed they can get into milk and return a good profit. Feed then becomes an investment, and the sort of cow eating it determines whether the investment is a good one or not. The cows may be of the best but unless they receive proper feed and in sufficient quantity we can not expect satisfactory returns. My observations here in the Northwest lead me to believe that many dairymen feed too little and are not working their cows to full capacity. It requires a certain amount of feed to maintain the life of the dairy cow, and the amount in excess of the maintenance ration goes to produce dairy products. If no more is fed than the cow needs to maintain life she can not produce butterfat and milk without drawing on her strength and body for it. It is easy then to see how one can feed this maintenance ration to several cows, while the same feed, given to a smaller number of cows would produce a profit.

A number of years ago, the Cornell Experiment Station undertook to find out if improved feeding of a herd of cows that had been kept under average farm conditions would increase the percent of fat in the milk. Negative or non-conclusive results were obtained, but some other results were obtained that in their practical bearing were worth far more than the results looked for. While no appreciable increase in the percentage of fat was noted, the increase in the total amount of fat produced was astonishing, to say the least. The herd of cows selected for this work was evidently such as are found on the average farm in any dairy community. They were probably not as well bred as the average dairy herd in New York for there seemed to be a decided lack of dairy blood, and the illustrations accompanying the report shows a mediocre lot of cows. The herd was fed by the farmer the first year and a record kept by the station officials. The second year the herd was removed to the university and fed and cared for as a herd should be. The following table shows the butter produced the first and second years, the figures be-

ing taken from an article in Hoard's Dairyman:

Cow No.	First Year.	Second year.
1	139	148
2	123	274
3	156	255
4	172	342
5	177	346
6	155	320
7	174	319
8	129	276
9	193	337
	1409	2717

This illustrates what I have in mind, that if many of our so-called poor cows were given a chance they would prove to their accusers that the cause of their failure was no fault of theirs. In other words, there are as many poor feeders as there are poor cows.

Many dairymen in the Northwest have taken advantage of the silo to reduce the cost of production and many more should do so. In North Dakota the Experiment Station found that where dairymen were feeding silage the cost of producing butterfat was eleven cents a pound. On farms where no silage was fed the cost was twenty cents a pound. This difference, even in a small herd, would pay for the silo in one year. In the State of Utah there are about 100,000 dairy cows. In certain sections of the East where a systematic method of improvement has been in force for two years, the increased profit per cow was \$17. A system of herd records is a basis for this improvement work, and if each cow in this State could be made to increase its profit even \$10 per year, it would mean one million dollars. This amount of money coming into the hands of the dairymen each year would have an enormous purchasing power and would add much to the comforts of the farm homes.

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Landes & Company
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Stock of mills on hand.

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The Cutter Laboratory, Berkeley, California



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The deposits of this bank amount to more than \$7,000,000.

The increase during the past three months alone has been over \$700,000.

DEPOSITS

1912.....	\$3,200,000
1913.....	3,800,000
1914.....	4,500,000
1915.....	5,300,000
June 22, 1916	6,470,289
Sept. 22, 1916	7,197,364



Walker Brothers Bankers

Resources over \$7,800,000.
SALT LAKE CITY



Animals Enjoy Variety of Foods

"A good ration must be palatable or animals will not consume sufficient of it to do well," says Dr. Carroll of Utah Agricultural College. "One of the best ways to make a ration palatable is to make it of a variety of feeds. ANIMALS ENJOY A VARIETY AS WELL AS DO PEOPLE."




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"Imagine the eagerness with which you would look forward to a meal time after about a month on bread, butter and water three times a day. And yet you go on feeding some of your animals hay and water, or worse, month after month. The only method animals have of showing their lack of approval of such treatment is to eat only enough of such a ration to keep them alive. This, of course, cuts down production, and thereby reduces profits."


Read further what Dr. Carroll and the U. S. Department of Agriculture has to say on the question of profitable feeding in our booklet "Feeding For Results." Mailed free on request.



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604 Dooly Bldg.
Salt Lake City, Utah.

TEMPERATURE IN THE SILO

By C. H. Eckles.

Every one who has used a silo has observed that at times the silage becomes hot. This is generally noticed on the surface during mild weather as when the silage is being fed in rather small quantities. Many have supposed that the entire mass of silage becomes very hot and that a certain amount of heat is necessary to preserve it. Agents of various types of silos have also taken advantage of the lack of general information on this subject to make claims for or against certain types of silo on the ground that the temperature of the silage is influenced by the particular construction.

The Missouri Experiment Station decided two years ago to get the facts. Electric thermometers were placed in silos to take the temperatures. A bulb was placed in the silo during filling at any point where it was desirable to take the temperature. This bulb had wires leading to the outside of the silo so the temperature could be taken with an electrical device at any time. Temperature readings were taken near the center of the silage mass and at the wall at frequent intervals during two seasons in from 8 to 10' silos, including stave, iron, tile, Gurler and concrete.

It was found that the temperature in the depth of the silage is never high as is so often thought. After filling the temperature rises from 5 to 10 degrees the first few days and then slowly declines during the fall and winter until it reaches the lowest point about 40 degrees in March. In good silage the temperature seldom goes more than a few degrees if any above 100 F. and may not go above 90. The only high temperatures found are at the surface when the air comes in contact with silage. Furthermore a temperature much above 100 means loss of silage as some of the material is being actually burned to make the heat. Mould will raise the temperature some. Corn put in the silo in a mature condition develops more heat than that put in green. No relation was found between the material used in the construction of the silo and the temperature of the silage. Practically no difference in the freezing of the silage on the wall was observed with different kinds of silage.—Missouri Agricultural College.

Delta, Utah.

Utah Farmer:

Gentlemen:—Will you please tell me in the next issue of your paper. What is the value of mangles or stock beets for cow feed for a milk producer? and what quantity to feed?

G. C. Sampley.

Answered by Dr. W. E. Carroll.

Mangles have been found to be a very good feed for dairy cows. They have been found practically equal to good corn silage. They can be fed in quantities up to 50 or 60 pounds with no danger at all. In fact animals have eaten as high as 100 pounds a day with no bad results. It may, however, not be economical to feed in such large quantities. From 30 to 40 pounds would possibly be the most economical amount to feed the ordinary cow.

THE DIFFERENCE

Henry: What is the difference between Massachusetts and Kentucky?

Etta: You know; let's have it.

Henry: One is noted for boots and shoes, and the other for shoots and booze.



symmetrical in design and adds to the attractiveness of the barn.

Proper ventilation is of vital importance. It means a sanitary barn, healthy cows, increased milk production, larger profits.

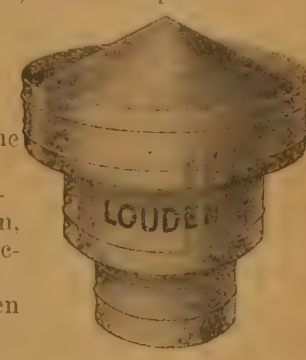
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Farmers Should Co-operate In Drainage of Land

Questions answered by H. A. Hart, Senior Drainage Engineer of the U. S. Department of Agriculture.

Should farmers, as a rule, endeavor to drain their farms individually or should several owners co-operate?

Co-operation is the watchword in the drainage of irrigated lands as in most other agricultural activities.

Up to the present time, a large portion of the drainage work that has been done in Utah has been undertaken by individuals owning small tracts, but the time has now arrived when larger units must be the basis of reclamation.

In the first place the work was largely experimental and it was necessary to operate on a small scale. The success of drainage as an agent of reclamation of alkaline lands could not be assured and consequently the U. S. Department of Agriculture and the Utah Experiment Station entered into co-operative agreements with individual land owners under which the owners furnished the necessary labor while the other parties furnished the necessary materials, engineering and supervision for the installation of experimental drainage systems. A number of such experiments were installed in various parts of the state and under a variety of soil conditions and the results were studied. Most of these experiments were successful. Those that were not successful did not demonstrate the inefficiency of drainage itself but they showed that ordinary methods could not be followed and that special methods and devices were necessary for the drainage of irrigated land.

So soon as it was evident that alkaline and waterlogged land could be reclaimed by drainage, the practice of furnishing materials was abandoned by the Department and the Experiment Station but the giving of engineering assistance to such land owners as wished to reclaim their unproductive lands was continued with the result that many farms have been restored to a highly productive condition. Each reclamation served as a demonstration that encouraged some other land owner to restore his unproductive acres.

Naturally those tracts that had a satisfactory outlet near at hand and could consequently be drained at least cost were handled first but a demand soon came for the reclamation of lands further from an outlet. In many cases it was impossible to drain such lands without carrying the water across the lands of a neighbor and this often resulted in trouble. Incidentally, the neighbor's land was also drained in some instances but there was no way of compelling him to pay his proportion of the cost. Thus the necessity of co-operation on a small scale was introduced.

But it was found that frequently a number of farms could be drained through the same outlet and at a much lower unit cost than were each tract drained individually. This led to attempts to work co-operatively but rarely were these attempts satisfactory. There was no way of compelling an unprogressive and owner to join in the mutual activity and the distribution of the costs led to much quibbling, reprimand and general dissatisfaction.

What method of co-operation is advisable?

What was needed was a legal and

authoritative organization and recently the legislature has provided the proper machinery for satisfactory co-operative action. The statutes provide for the organization of Drainage Districts. By the terms of these statutes the land owners in an area containing land in need of drainage may petition the county commissioners for the organization of a drainage district. No limit is set on the size of the area. A hearing is held by the county commissioners and if it appears that the petition is proper and that the lands will be benefitted by the proposed drainage the district is organized and the drainage supervisors are appointed. These supervisors are landowners within the district but they are the legal authorities of the organization and are the representatives of the county commissioners in all matters. They are required to secure the services of an engineer and have the necessary surveys, maps and plans made and to report the feasibility of the proposed reclamation, the probable cost and the probable benefits and damages. The county commissioners hold another hearing at which all these matters are considered and if it appears that the reclamation is feasible and that the benefits will exceed the cost and the damages, the drainage supervisors are authorized to proceed with the work. They may secure right of way, exercising the right of eminent domain in cases where landowners undertake to prevent the location of drains, purchase materials and tools and machinery, let contracts for the work and do all other necessary business in connection with the reclamation.

They are also required to make a careful study of the lands and to assess the relative benefits, since the cost is not distributed uniformly but is proportional to the benefits. They also assess the relative damages. The county commissioners then sit as a board of equalization and hear all objections to the supervisors report, readjusting the same if necessary.

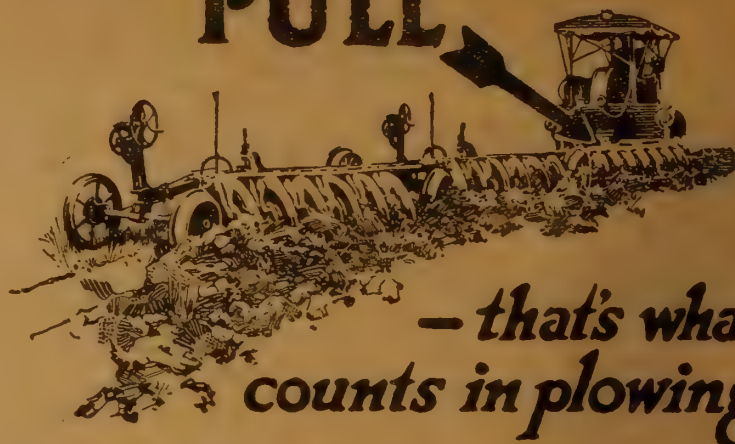
The annual assessments are added to the regular tax list and collected in the same way, by the county officer, and the proceeds are turned over to the drainage supervisors for their use. The drainage assessment thus becomes a first lien on the land, ahead of mortgages or other encumbrances, and consequently it is possible to secure funds for the reclamation by issuing bonds.

If the drainage supervisors deem it necessary or advisable to issue bonds they must call for an election under the supervision of the county commissioners so that the land owners may express themselves in this regard. Funds may be secured by a bond issue under more favorable terms and at a lower rate of interest than in any other way.

Is organization under the drainage district advisable?

The Utah statutes are satisfactory, on the whole, and the law is very workable. Organization under the drainage district law is recommended wherever landowners are interested as the advantages are many and the cost of organization and time required are many times repaid in the saving of expense and trouble.

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every competitive test. Study the Caterpillar and you'll find that reason—right design, right materials, right construction. Or, better still, investigate the records of Caterpillar owners. Their success and satisfaction is a sure guarantee that you, too, will find the Caterpillar the most profitable tractor investment.

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Salt Lake City, Utah.

WILL THE FARMERS TAXES BE RAISED OR LOWERED IF THE TAX AMENDMENT BE PASSED THIS ELECTION?

By Francis W. Kirkham.

(We previously printed some articles on this subject. A number of questions have been asked us about them, and they were referred to Mr. Kirkham and he answers them in this article.)

There are three ways to lower the taxes of the farmers. First: See to it that your representatives in the legislature pass fewer appropriation bills; Second: Secure the greatest possible economy in the expenditure of the money thus appropriated, and Third, Shift the burden of taxes from the farmer and the small property owner to those who are more able to pay.

Regarding the first. There is a rush each time the legislature meets, for appropriations and more appropriations. Public expenditures have been increasing and will continue to increase for the reason that we demand constantly more and more of our governmental bodies. Only a few years ago, we wondered at a billion dollar Congress, now we have a two billion dollar Congress.

Expenditures for schools, roads, public health and sanitation, inspection and marketing of farm products, etc., are increasing and new work for the governments is constantly being created.

Such a condition is not necessarily an evil. It is a sign of advancement in our civilization.

Fewer appropriations can be expected, no matter how much our legislators promise. Voters before election demand fewer appropriations, when the legislature meets, every county makes

its rush for money for public purposes. Regarding the Second. Something can be accomplished to secure economy in public expenditure, but this saving is relatively small in any event.

But regarding the Third. Who shall pay the taxes, how shall this burden be distributed.

It is universally conceded that the small property owner should not be taxed directly on his home and small holdings as much in proportion as the large property owner. Why? First, because he consumes practically all he produces and he is taxed indirectly on all the articles he consumes or uses. Second, the burden of taxation is greater to the small property owner if the tax be in direct proportion to property than to the larger owner. Every citizen should pay taxes but the burden of taxes should be distributed equitably.

Under the constitution of this State all property must be taxed at the same rate and every property owner must pay in proportion to his property. There can be no variation from this, no exemption in favor of the man who consumes all he produces until the Constitution be amended and this is one of the main reasons why the legislatures last session by a two-thirds majority proposed the amendment to the Constitution.

But are the large property owners of the State paying in proportion to the small owner? No! positively, no. The most flagrant exception to this rule lies in the present taxation of mines. The mines of this State by the Constitution pay only on net proceeds, not on the value of their property. The new law of the last legislature lowered the rates and thereby increased the levy, but the levy of mines could not be increased under the Constitution and this state lost thereby, taxes on over \$40,000,000 of mining property on one mine alone. This was a clear gift to the rich eastern owners of that mine. Previous to this year the mines of the State of Utah were not taxed as much in proportion as the mines of the other western states. This year their taxes have been reduced two-thirds over their former low rate.

Large sums of money are being spent to induce the farmers to vote "no" to the tax amendment by the mine owners. If you defeat that amendment, farmers, of the State of Utah, you will add to your own burden the amount you take from the mines.

There will be a deficit this year of \$400,000.00 in our State taxes. We shall spend this much more than we collect in taxes. Some one must pay this bill. Shall you or those who rightly should. Vote "Yes," for the amendment and at least place the taxes of the mines where they were a year ago. Your taxes have not been reduced.

In Answer to Objections Raised. This amendment does not increase the possibility of bonded indebtedness. The bonded indebtedness of the State, Counties or Cities is in proportion to the assessed valuation of the property. We have increased our assessed valuation nearly three times by legislative enactment under our present constitution.

This tax amendment does not increase the powers of the State Board of Equalization nor does it increase



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**Low Corn King
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SOMETIMES Americans wonder why they get only about half the crop yields from an acre that are produced in other countries. Well, here's one reason—a large majority of the farmers in this country own no manure spreader. One corn belt state lost \$20,000,000 last year by the wasting and poor handling of manure. Are you one of the farmers who shared in this loss? If you are, you need an IHC manure spreader.

International Harvester spreaders, **Low Corn King** and **Low Cloverleaf**—besides being low, strong, durable, simple in beater and apron mechanism, with good traction, light draft, and plenty of clearance—have a really successful wide-spreading device.

Low Corn King and **Low Cloverleaf** spreaders are low for easy loading and narrow for easy handling in yard, stable or field. From a box 45 inches wide either of these spreaders covers an even strip of ground 8 feet wide, or better. It saves time and labor, and keeps wheels and horses well away from the slippery manure already spread.

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PRICES			
Tires Tubes		Tires Tubes	
30x3 in.	\$8.60	30x4 in.	\$17.45
32x3 in.	10.85	32x4 in.	21.20
32x3 1/2 in.	12.75	32x4 1/2 in.	22.50
32x4 in.	15.75	32x4 1/2 in.	23.00
34x4 in.	16.70	34x5 in.	26.30

All other sizes not included in above list also furnished. Non-skids at 10% additional. Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified. Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Descriptive folder upon request. Write for it.

Double Service Tire & Rubber Co., Akron, O. Dept.

When you answer the advertisement in this paper tell them you saw in the Utah Farmer. Always buy advertised goods.

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their salary. The legislature may increase their salary now, if it should so decide and could also greatly increase their powers. This amendment makes possible a law allowing them to equalize the assessment of property within a county where as today they may only raise or lower the property of a county as a whole. This law would prevent the correction of favoritism of local assessors only.



Combined with the
Deseret Farmer and Rocky Mountain Farming
Established 1904

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Utah Horticultural Society, Utah State Dairymen's
Association, Utah State Bee Keepers' Association
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Association, Agricultural College Extension Depart-
ment and Utah State Fair Association, Utah-Idaho
Millers' and Grain Dealers' Association, Utah Fruit
Growers Association.

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We guarantee every subscriber against loss thru dis-
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upon application.

There is no better way to do away with noxious
seeds and insects than burning them.

When you use a scrub bull, you cut off one-half
of the powers of progression, and by reversion
you are likely to go back to what you don't want,
and the danger is stronger because of the tendency
to revert to the original type.

1917 PRICE OF SUGAR BEETS

The price of sugar beets for 1917 will be
advanced 50 cents a ton, according to an announce-
ment made by the Utah-Idaho Sugar Company.
This new price has no effect on the present crop,
it is for 1917.

Beets which polarize 15 per cent sugar will be
paid for at the rate of \$6 a ton, while beets polar-
izing 14 to 15 per cent sugar will be paid for at
the rate of \$5.75 a ton and beets between 13 and
14 per cent sugar, \$5.50 a ton.

PRICES GOING HIGHER.

If we knew what the future price on our
products would be, we could make a lot of money
but as it is we must make a guess, study con-
ditions and then use our best judgement.

At the present time prices are very high on
some things. We were told that wheat sold in
Northern Utah last week for \$1.58. Will it go
higher?

For some time it has looked like good prices
for potatoes could be secured, and the prospects
are now that they will go much higher.

The hay market is very firm and selling now

for as much as it sold for any time last winter.

Our suggestion is that you look up the market
before you make any contract to sell.

SELECT YOUR SEEDS NOW.

There are some seeds that you can select now
for next year and you ought to do it. The good
demand for all kind of grains and potatoes will
cause many to sell and the result will be a short-
age next spring. Secure now by selection or
purchase enough seed for next year.

A shortage of seed wheat also seed potatoes
next spring seems quite probable. We have no
desire to say when farmers should sell. It is a big
problem to always know when it is the best time
to sell. Foreign purchases and the local demands
are bound to keep prices up the rest of this year.

A wheat bin well filled now looks like it would
beat money in the bank.

Secure enough seed for next year and put it
away. Good seed of the best quality is the kind
to plant and right now is the time to secure it.

SAVING FEED BILLS

The high price of hay is a problem that a num-
ber of our farmers will have to meet. Some very
economical feeding will have to be done or else
many will have to sell some of their live-stock
on account of the high price of feed.

It is a poor policy, however, to sell your live-
stock now, for it is a poor animal that is not
worth its feed.

The thing to do is, make your feed go as far
as possible and right now use all the pasture
possible. Allow your stock to run in the field;
they will pick up a great deal that would other-
wise be wasted. With a little care our feed can
be made to go much farther. We have been too
wasteful in the past because of having plenty.

If you will take care of the waste right now be-
fore winter sets in, you can help your feed go
much farther when cold weather comes.

Many of our live-stock men are criticized be-
cause of our poor feeding. Experts say that many
herds are under-fed for making profit. All these
things are to be considered in the economical,
profitable feeding of our live-stock the coming
winter.

SCHOOL FAIRS.

We want to recommend to our district schools
that they hold a community fair. Encourage the
boys and girls by arranging for an exhibition
of their work. This can be done in connection
with the boys' and girls' club work. Competition
in the display of domestic art, domestic science,
horses, cows, calves, chickens, hogs, sheep, and
cattle will stimulate an interest in all kinds of
farm life.

Have a small fair—and let the larger students
judge the products according to a score card ar-
ranged by teachers. Stock judging, grain judg-
ing, will teach them more than many school
lessons.

Invite the parents to the fairs and it will be a
great help to the boys and girls because every
parent will want to help his boy or girl to excel
another year.

Parents generally do not show the interest in
school activities they should.

Do not try to make too big an affair at first,
but make it as big as you can successfully.

Plan your work and let the boys and girls act
with you on committees, direct them and help
them to make it a fair of their own.

A community fair will create a lot of interest if
you will go at it right.

U. S. DAIRY EXPERTS.

Two new workers have come to the U. S. Dairy
Division at Salt Lake City. Mr. E. V. Ellington
who had charge of the Dairying in the state of
Idaho, will assist Mr. Doreman in the govern-
ment dairy work, making a specialty of dairy
farm problems, feeding, buildings and the general
work of the dairy farmer.

Mr. C. H. Hoyt, formerly of the California
State Dairy Bureau and a well known chemist
and bacteriologist, will have charge of the market
milk department. He will help in the adoption
of the most improved methods of the milk busi-
ness.

Our Government and State are doing a great
deal to help the farmers and we wonder if they
appreciate this. Are we making the most of the
help these experts are able to give us? Don't
be afraid to ask them questions, so they
can help you in your work.

PLANT MORE TREES

Why does it seem necessary to keep reminding
people about planting trees? Everyone knows
that fine trees and graceful shrubbery add much
to the beauty and selling value of a farm, as well
as give shade and comfort. Then why are the
lawns surrounding our homes and schoolhouses
and the roadsides so barren? In the older
countries much of the beauty of the landscapes
comes from the trees and shrubs which have been
cared for for generations.

There is real value to come from planting and
growing trees. If you were going to buy a home
or a farm, think what a difference a few trees
would make to you in the looks of the place.
Looks is one way of adding value, at least in
getting more money when selling.

The very best trees to plant are those which
are native to your locality. Little care is need-
ed, once they are well planted, and no better
monument can be asked for man than splendid
trees set with an eye to use and beauty. In some
localities apple and nut trees are being planted
by the wayside. Are you going to do your part
toward increasing the beauty and comfort of this
old world of ours?

PRODUCER AND CONSUMER

If some way could be worked out so that the
producer and the ultimate consumer could be
brought closer together, it would mean better
prices for producer and lower prices for con-
sumer.

Retail dealers are complaining because the
produce and commission men are "holding them
up." Potatoes are selling for two cents a pound
in Salt Lake City. The farmers 30 to 50 miles
from Salt Lake City are selling for just half that
price or one cent a pound.

Here is a case where some one is making as
much for handling and selling the potatoes as the
farmer has made from his whole year's work
raising them. The price to farmers has advanced
during the last few days but that does not change
the facts as they were when the above conditions
happened. Our system of marketing is bad
when consumers pay so much and farmers get
so little (just half) of the price paid by the last
buyer.

Potatoes is not the only product of the farmer
that pays so many profits to others before the
final customer gets them. This marketing ques-
tion is one that our farmers organizations should
take up and see if something can not be done
to help both producer and consumer.

WHAT IS A GOOD SIZED FARM?

O. R. Johnson, Missouri Experiment Station.

A profitable farm business must be a good sized business. A good sized business does not always mean a large number of acres—although it usually does.

A man on a good sized farm can make a profit more easily than a man on a small farm. He can employ men, horses, and tools more efficiently, can follow a good cropping system more easily, and can have more lines of work so that his risk of loss is less. A more regular supply of labor and better distribution of capital is possible. These are some of the reasons for the better chances of success with the larger business.

The number of acres operated is not the only measure of size of business. The man with too heavy a capital investment may think he has a large business when in reality it is very small. The investment of the average farm of a region is the safest guide for that community. A man with a large number of acres and not enough capital to operate them is much worse off than if he had fewer acres and enough capital to handle them efficiently. Every acre must be

TAYLOR

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Trapping pays big if you sell where you get the most money. St. Louis is world's greatest fur market and F.C. TAYLOR FUR CO. is oldest and largest house here. It will pay you to join the happy family of Taylor shippers.

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Our catalog-Booklet entitled "Opportunities for pleasure and profit in trapping" is different: you will say so when you get your copy. It's FREE if you mail a postal to-day. Our trappers supply department will help you get started. Write Today.

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Dairy
Land

Richland Acres

TILE DRAINED

"THE HEART OF CACHE VALLEY"

Beet
Land

In Buying Land You Should Consider Its Location and The Quality of Its Soil

RICHLAND ACRES is a farm subdivision of 3000 acres situated on the floor of Cache Valley three to five miles from Logan, Utah.

It is served by

The Utah Agricultural College and public schools.

The Oregon Short Line Railroad—Two beet stations.

The Amalgamated Sugar Company—Logan plant one mile distant.

The Borden Condensed Milk Co.—Wagons pass through the area.

Mountain States Telephone and Telegraph Co.

Utah Power and Light Co.—Power and light service.

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RICHLAND ACRES HAS

Tile drained, silt loam soil one to five feet deep.

Every element requisite for plant food, according to actual analyses.

Land adapted for sugar beets, alfalfa and garden truck in particular.

Reclaimed swamp lands of unexcelled fertility for celery culture.

Unsurpassed primary water rights and excellent flowing wells of purest water.

RICHLAND ACRES IS BEING SOLD ON EASY TERMS AT \$100.00 TO \$200.00 PER ACRE—ONE FOURTH CASH—THE BALANCE IN TEN ANNUAL INSTALLMENTS, BEARING 6% ON DEFERRED PAYMENTS.

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A. F. CARDON, Manager.

LOGAN

UTAH

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Logan, Utah.

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LAND ACRES.

Name _____

Address _____

I am interested in beet land
dairy land

farmed enough but not too much.

Another factor which may limit the size of business is the productivity of the land. The men on farms of average productivity and up to one-fifth more than average are the fortunate ones. The man with less than average yields or more than one-fifth better than average yields finds it harder to make a success of his business. With less than average yields he gets no profit from crop production; with more than one-fifth better than average yields he is usually paying more than the increased yield is worth to get that yield.

Another factor of importance which limits size of business is the system of farming which the man is following. In extensive farming regions a man can put too much labor on an acre of ground or he can put too little labor on that acre. A two hundred acre farm may readily be no more efficient than a hundred acre farm because the man on the two hundred acre farm does not farm the land

while the man on the hundred acre farm farms it right.

WILKES

THEATRE PLAYERS

ALL NEXT WEEK

Stewart Robbins, Miss Nana Bryant and the Wilkes Players in the play of a thousands laughs

"ALONG CAME RUTH"

Matinees, Thursday and Saturday

Prices 15c and 25c; boxes, 50c.
Night prices, 15c, 25c, 35c, and 50c; boxes 75c.

UTILIZE FRUITS

With cold winter days so near, the thoughts of dainty, tasty jellies and delicious jams made right at home are natural. They are cheaper than substitutes—and, oh, so much better. The West's grapes and apples are now available. Utilize them this year—you'll have success by using

Western-made Sugar

Mention Utah Farmer when you write.

HOME

YEAST

Gail Richie.

Yeast is a tiny plant—a single celled, colorless plant, so small that it requires a powerful microscope to make it visible. We know the requirements of larger green-colored plants, and we can apply this knowledge in our care of the yeast plant. The yeast requires food, moisture, air and warmth for its growth. The food and moisture are supplied through the ingredients in the dough, the air is furnished by the beating and kneading, while the warmth is easily supplied if the dough is kept at a moderate temperature. The yeast can stand a freezing temperature without much injury, but at this point it does not grow. A very hot temperature will kill the plant. We do not put boiling water on our geranium and expect it to grow. Neither should we expect our yeast plant to grow under such conditions. The best temperature for growth is 70 to 72 degrees F.

The yeast plant requires sugar for food. The growth of the plant on sugar produces a change, called fermentation, breaking the sugar down into new substances, alcohol and carbon dioxide. The housewife is familiar with this action in canned fruit. Occasionally, a jar of fruit will spoil or "work." We have seen the same thing happen to a dish of apple sauce on the pantry shelf. It becomes filled with bubbles and has a sharp flavor. The yeasts which cause the fermentation of cider are usually the wild yeasts of the air, unless in large factories where special varieties are added. Too much sugar, however, will prevent the growth of the yeast plants, as is seen in the case of preserved fruit, the amount of sugar being too great and the yeast plant unable to grow.

Now, every person who grows a garden knows there are certain conditions absolutely necessary if his garden is to be a success. He knows he must have a suitable soil, good seed, and enough moisture and heat. Besides all this, he must work the garden

right, and harvest the crop when it is at its best. So the gardener selects his soil with care, secures viable, pure seed as free from weed seed as possible, and studies the needs of his plants as to moisture and warmth.

The bread maker is a gardener, but her soil is flour and her seeds are yeast plants. She adds milk or water to supply moisture, regulates the warmth, cultivates her crop by kneading, and harvests by the use of a good oven. Bread has been an important food for thousands of years. We read of the use of unleavened bread in Bible times. We can imagine how the bread leavened by yeast plants was first discovered. Suppose some one had mixed her bread and put it out in the sun to bake as was the custom in those days. Maybe the sun was not quite hot enough and when she looked at it again, it was full of bubbles due to some wild yeasts falling into it. But she went on and baked it and found it was more palatable than the other. There are a number of different varieties of yeasts, just as there are of many other plants. Many are found in orchards and in grape vines. Only one or two varieties have been found suitable for bread-making. The other varieties are commonly called wild yeasts, and those which are kept for special uses are called cultivated yeasts.

For the purpose of breadmaking we have a choice of three forms of yeast—all the same variety, however. The so-called "dry yeast" on the market is made by taking live, growing yeast plants and drying them after mixing with corn meal. When dry yeast has been kept for a long time, many of the yeast plants die. Sometimes the corn meal used contains many micro-organisms which cause sourness. So when dry yeast is used as seed in our flour soil, the seed may be dead or it may have many "weed seeds" in it. If these conditions exist we do not get the crop we want, but our result, is heavy, sour bread. Dry yeast requires more time for rising than either of the other kinds. It is a good plan when a new package of yeast is bought to try a piece in a small amount of warm water. If after ½ hour the yeast cake becomes puffy and bubbles appear, you may be sure your yeast is alive.

Compressed yeast is a form usually preferred, because it is pure, vigorous and will raise bread more quickly than either of the other two forms of yeast. It is obtained from beer vats in breweries, is separated by skimming, washed with water, freed from impurities by washing through sieves or by settling, pressed into bags in hydraulic presses, cut into cakes, wrapped in tin foil and kept cold until distributed for use. When fresh it should have a creamy white color, uniform throughout, should possess a fine even texture; it should be moist without being slimy. Its odor is characteristic, being somewhat suggestive of the apple. It should never be "cheesy," such an odor indicating decomposition; as does also a dark or streaked color. If breadmakers are where they can obtain fresh compressed yeast, they will find it easiest to work with and to secure uniform results. Homemade yeasts are essentially mixtures of flour, water, and potatoes, with dry yeast, found in the market or with other yeast as "starter." Homemade yeast is sometimes made into cakes as is the dry yeast of the market, but more often it is kept in liquid form or in that of a sponge. Much difficulty has arisen in the use and care of

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"Ball-Band" Boots have wear built into them. They are vacuum cured. During the vulcanizing, a tremendous pressure makes fabric and rubber one solid piece.

"Ball-Band" Rubber Footwear is comfortable. It feels good on your feet.

Whatever style of Rubber Footwear you want, look for the Red Ball and get "Ball-Band." Most dealers sell it, but if yours does not, write us and we'll see that you get the genuine.

Our free booklet, "More Days Wear," illustrates the right kind of footwear for different kinds of outdoor work.

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The Perfection can be carried about as easily as a woman's work basket. Take it anywhere and use it when bathing, dressing or resting.

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It strengthens and livens the leather. It is harness insurance. It adds new life to old harness. It keeps new harness new.

Dealers everywhere

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homemade yeasts because of a failure to appreciate the fact that yeasts are plants and therefore require conditions favorable for plant growth. Moreover, careless or uncleanly handling of the yeast in regard to the vessel in which it is kept allows bacteria to mingle with the yeasts. As these multiply they sometimes give an unpleasant flavor to the bread. The starter is good in experienced hands, but must be carefully cared for.

The woman who does not understand "why this yeast that made such good bread a month ago will not work now," will find a probable explanation in the fact that the yeast have taken from the potato water or flour or sugar, all the food they contained for the yeast plant, and so it has died from starvation. Meantime the bacteria have increased in number

NOTICE
TO FARM BUYERS

Do you realize that farm products are higher today than they have ever been since the civil war? Wheat is selling on the Chicago market this morning at \$1.59 per bushel, potatoes are selling in Salt Lake at \$1.85 per hundred; hay is worth from \$15 to \$20 per ton; butter is 50 cents a pound, and eggs 50 cents a dozen; sugar beets are higher than they ever were before. There is no immediate chance for any of these prices to go down.

The following are just a few of the many farms we have that will pay for themselves.

80 acres on the main county road, near a first-class school and railroad station at Elwood. Water right from the Bear River canal; for \$115 per acre, on terms.

460 acres of sagebrush land under the Bear River canal, and all subject to water at a very nominal cost. Three-quarters of a mile from the railroad station; in the center of Bear River valley. For the extreme low price of \$35 per acre, on terms. Ten years to pay, at 6 per cent interest.

We have one of the best farms and ranches combined in the Snake River valley. Short distance from Idaho Falls. Contains 450 acres. This property is all under a high state of cultivation, with good improvements. Has been producing a big crop for a number of years. Has first-class, free, independent water right. For sale at \$80 per acre. Will consider some exchange in Utah.

We have 14,000 acres of irrigated land for sale at Downey, Idaho, in 40 and 80-acre tracts, for \$60 to \$100 per acre, on terms of ten years at 6 per cent interest. This is a great opportunity for a poor man to get land.

We exchange city homes for farms and farms for city homes.

KIMBALL & RICHARDS,
"Land Merchants,"
56-58 Main Street,
Salt Lake City, Utah.
Phone Wasatch 963.

Apple Sauce

Right now is the time to make apple sauce for use this winter. Apple sauce is an appetizing, healthful food and may be used in many different ways. It's economical and will save many a dollar when food-stuffs are high in price. Don't throw the parings away; use the following recipe and have plenty of good jelly at a small cost.

Make Apple Jelly With Parings

Place parings in kettle, add a few apples and a handful of grapes or a few quinces and a few slices of lemon. Cover with water and cook slowly until parings are tender. Strain through jelly bag. To each pint of juice add a pint of sugar. Set juice on stove ALONE to boil; while boiling put sugar into shallow pan and heat in oven, stirring it to prevent scorching. When sugar is hot put into boiling juice, stirring until all the sugar is dissolved; then boil from 10 to 15 minutes. Pour into sterilized glasses and when cold seal with paraffin wax.

To insure goodness and purity use—

UTAH-IDAHO SUGAR
ABSOLUTELY PURE

and given an acid character to the bread resulting in the familiar sour flavor so characteristic of certain homemade breads. There should be frequent bakings when "starter" is used or else the yeast plants should be given new food in the form of sugar and kept in a cool place.

HEALTH NOTES

How to Avoid Measles and Whooping Cough.

The difficulty in guarding against these diseases lies in the fact that they are most "catching" in the early stages, when even the physician can not yet be sure what is the matter. Measles begins with a running nose like an ordinary cold in the head, and at this time the discharges from the nose and throat are more virulent than even later on, when the rash appears and the child is put to bed. The same thing is true of whooping cough, which begins with an ordinary cough, and may go on for days without any whoop, to show just what is the matter. If the child goes to school or plays with other children at this stage, they are almost sure to contract the disease if they have not had it already.

The only way to check these diseases is for mothers and teachers and medical school inspectors to remember how dangerous they are and to watch children carefully for signs of a cold or any illness, and if there is a chance that they may have measles or whooping cough, to keep them out of school and away from other children.

It is the babies with whom measles and whooping cough go hard. So particular care ought to be taken to keep those who are not perfectly well away from their little brothers and sisters.—Bulletin New York State Department of Health.

CARE OF CURED MEAT

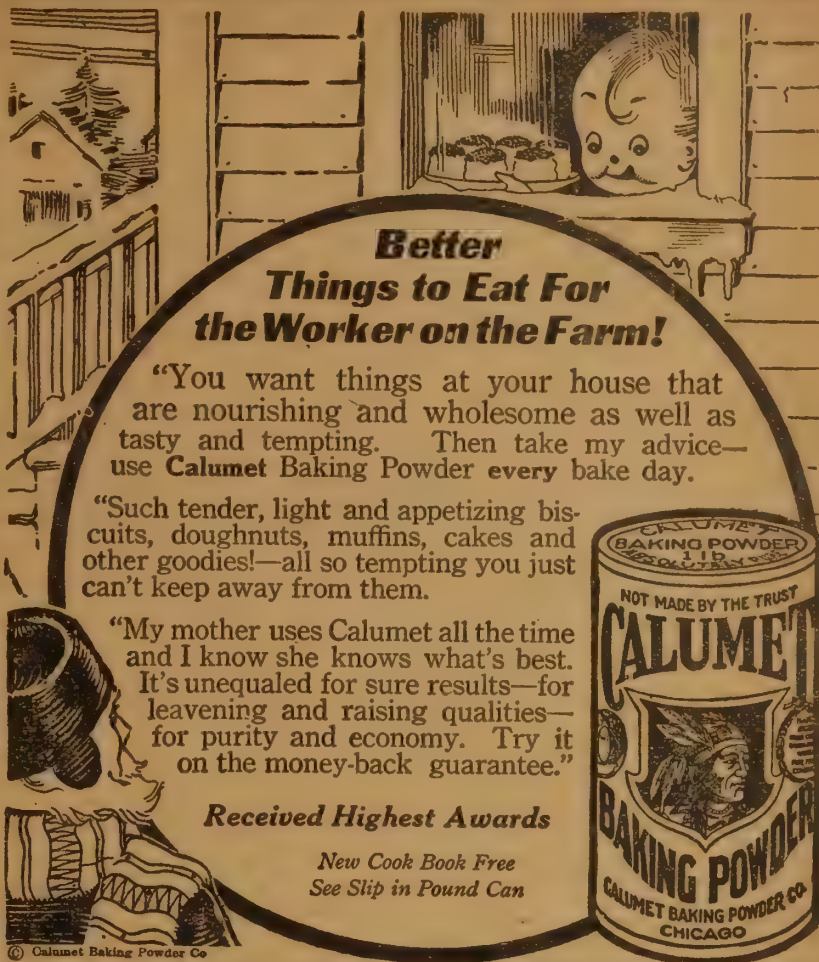
Do not sprinkle meat with borax to keep off the skippers, but wrap it thoroughly and hang in an airy place where the mice can not get at it. The best method of wrapping meat for keeping over summer is to enclose first in a cloth flour sack and then in a paper flour sack; tie the ends of the sack tight enough so that flies can not get in around the string.

Pieces of meat should not touch each other or they will mold considerably. In damp, muggy weather cured meat will mold in spite of all you can do. The mold, however, is only on the surface and can easily be removed. Do not hang the meat in a damp basement or the mold will be excessive. Do not try to hold the shoulders until fall, as the mold penetrates into the fatty tissue of the shoulder and there is considerable waste in removing this moldy part. The ham muscle is more compact and the loss in removing the moldy part is very small.

If the smoke house is dark and fly-tight the meat can be kept through the summer, without wrapping.—P. F. Trowbridge, Missouri A. C.

GASOLINE TEST

Owners of automobiles and gas engines may desire to compare different lots of gasoline they buy. If so, the following simple test will be found helpful: Dip strips of white paper of the same size to the same depth in the different samples of gasoline exposing them side by side in the air. Note the difference in rapidity of evaporation. The lighter or higher test gasoline will evaporate first. The heavier gasoline will develop more heat per gallon and, if the engine runs



Better Things to Eat For the Worker on the Farm!

"You want things at your house that are nourishing and wholesome as well as tasty and tempting. Then take my advice—use Calumet Baking Powder every bake day.

"Such tender, light and appetizing biscuits, doughnuts, muffins, cakes and other goodies!—all so tempting you just can't keep away from them.

"My mother uses Calumet all the time and I know she knows what's best. It's unequaled for sure results—for leavening and raising qualities—for purity and economy. Try it on the money-back guarantee."

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Tell Your Ma

TO BUY YOU

"TOMBOY HOSE"



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They wear like "heck."

Kids are "tough" on stockings, but "TOMBOYS" will hold 'em alright.

They are the hose for school days

Fine or coarse rib for girls and boys and at the price of ordinary stockings, too.

ASK YOUR DEALER FOR

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If your dealer can't supply you, write us.

John Scowcroft & Sons

Ogden,

Utah

well with it, it will give more mileage and slight more power, but the lighter gasoline evaporates more easily, which makes the engine easier to start in cold weather, and it also gives smoother operation.

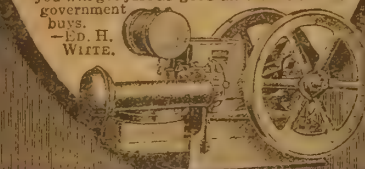
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WITTE ENGINES Built by Experts

are so good that the United States government, states, counties and cities buy them to run irrigation works, light plants, water works, etc., where absolutely dependable and economical power is required. When you buy a WITTE you will get just as good an engine as the government buys.

—Ed. H. Witte.



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Quit buying new harnesses every year. Preserve the old ones. A new harness may be kept new, and an old one preserved by applying—

DUCK-BACK Harness Oil

to them. Water runs off harnesses treated with DUCK-BACK HARNESS OIL just like it does off a duck's back. Ask your dealer for a can and save your harnesses, by using it regularly.

Utah Oil Refining Co.
Refiners
Salt Lake City, Utah

CLOVER SEED IN THE TWIN FALLS COUNTRY, IDAHO

Eight years ago shortly after the great Twin Falls Irrigation Track was opened, a man by the name of Mark Sullivan of Kimberly, Idaho, set out considerable acreage to orchard and in order to keep down the weeds, he sowed Red Clover between the rows, the next season he harvested 8 bushels of Red Clover Seed per acre which brought him \$70.00 per acre. The land was then selling at from \$40 to \$50 per acre but as quick as this became known the price of land doubled. I am sure Mr. Sullivan had no thought at that time that he would be the Father of one of the principal industries in the State of Idaho. Twin Falls County produced last year \$1,600,000.00 worth of Clover Seed and it is estimated it will do much better this season.

The production of Clover Seed is not by any means confined to the Twin Falls district but nearly every county in the State is raising this valuable crop.

The method of seeding is simple, 60 lbs. of Wheat or Barley is sown in the Spring per acre, 12 to 15 lbs. Red Clover is sown after the wheat is planted and lightly harrowed in, then the ground is corrugated for irrigation and practically a full crop of grain is thus harvested. The grain acts as a nurse crop and affords a protection for the young plants from the hot rays of the sun as the plants are very tender when young.

The first crop of Red Clover is cut from June 10th to 15th and the second crop is left for seed. The hay is of nourishing quality and is highly valued for dairy stock and sheep.

Alsike Clover is planted the same as Red excepting that you plant 7 lbs. per acre and you let the first crop go to seed.

Large yields of these clovers have made wonderful changes about the farms, beautiful homes have taken the place of board shanties, which are so common in the new irrigated districts; barns with all the latest improvements are replacing the straw covered sheds; automobiles are taking the place of dead axle wagons; and the towns too in the clover sections have benefited by the general prosperity of the farms; merchantile houses that would be a credit to cities of 50,000 to 60,000 inhabitants can be found here; banks that were originally little frame buildings 16 x 30, now have magnificent buildings in banking quarters. In talking with one of the cashiers recently he said "Our deposits have reached the Million Dollar Mark and the other bank is close to us with Nine Hundred and Sixty Thousand." Think of a bank that only had \$25,000 capital and less than \$50,000 deposit and have made all this progression in the short space of eight years.

Large returns for the Clover Seed Crop are not uncommon; on the contrary they are the rule. Ernest Smith bought 80 acres near Hanson, Idaho, which was all planted in Alsike Clover at \$80 per acre, his seed crop sold for \$6,600 and he sold his land for \$120 per acre which gave him \$9,800 for a season. (This land was recently sold for \$150.00 per acre).

William Vogel bought 120 acres near Buhl, Idaho, for \$115.00 per acre. 80 acres of this land was in Red and Alsike clover and he received a check from a well known Salt Lake Seed House for \$10,561.00 for his clover crop. Robert Hayes had 20 acres of White

"HIPRESS"

WITH THE RED LINE 'ROUND THE TOP

"Hipress" will frequently outwear 2 pairs of any other rubber boots or shoes made!—

The actual wear of over 5,000,000 pairs of "Hipress" proves this beyond question. For they are the only ones that are welded—under terrific machine pressure—into one solid piece of rubber, just like Goodrich Auto Tires.

Genuine new Auto Tire Tread Rubber, tough as nails, is used in every pair of "Hipress." Thus they frequently outwear all others 2 (and even 3) times.

38,000 stores not only sell but recommend "Hipress." All styles. Look for "The RED LINE 'round the top"—it marks the genuine.

The B. F. Goodrich Co.
Akron, Ohio

Makers, also, of TEXTAN—the Goodrich Sole, that outwears leather on leather shoes, and

Goodrich "STRAIGHT-LINE" Rubber Overshoes A fit for every foot and—double wear in every pair.



BUY

SEED POTATOES

NOW AND SAVE MONEY.

Five years ago I bought the best seed I could secure of Idaho Rurals and have hill selected my seed each year. As a result of this careful work I have some good seed potatoes for sale.

First Prize at State Fair 1916

I took the first prize for Idaho Rurals at the State Fair this year. This will give you some idea of the kind of potatoes I am producing.

Plant good seed and get bigger crops. Of course the seed costs a little more than ordinary potatoes but the return will be so much greater.

Will make lower prices now at the time of digging. If you want some good seed, write me today—now.

FREEMAN ROYLE

LEHI

UTAH

etch Clover which brought him \$7.00 per acre. The nearby states such as, Utah, Wyoming, Nevada and Montana can grow equally as good a crop as that of who and look for large quantities to be produced in these states in the very near future.—From Utah Farmer, issue October 21st, 1916.

QUESTION AND ANSWER

ah Farmer:
Two years ago I had some extra carrots. I picked out some of the best ones, put them in a year ago and spring raised some seed last fall. It in ½ acre this spring from that seed. The whole thing has gone to this year. What is the cause of

A Subscriber.

answered by E. P. Taylor, University of Arizona.

In regard to the production of carrot seed, and the reason your carrots went seed the first year after seed: Will state that you seem to have practiced the usual custom in the growing of carrot seed, though your results are what is usually to be expected. To produce carrot seed, the best carrots are selected and stored through the winter and planted out for the next seasons growth; and as the carrot is normally a biennial, the crop seed will form the second year. Ordinarily, about twenty-five carrots could produce enough seed for planting an acre.

Occasionally, when root crops such as carrots and beets are checked during growing season by extreme cold or by drought, they develop seed the first year, and it is possible that this is the reason for your seed developing prematurely.

California they produce more carrot seed than most sections, and our practice there is to plant the seed in the middle of July to the middle of August. The crop matures in December or January and the roots are preserved and planted out in early spring and the seed matures during the months of July and August. I trust that this may throw some light upon your problem and also assist you in shaping your practice so to produce successful carrot seed the second year. Your idea of growing is commendable and one it should be adopted by other gardeners and farmers in the state.

ODORIFEROUS

Smell anything, grandmother" said the youngster who was lying on the floor drawing. Grandmother assured him she did

he young artist gave a few finish-touches and repeated his question. Grandmother sniffed the air and again laughed she smelled nothing. "Well," said the boy, "you ought to have just drawn a skunk."

AT THE COLORED CABARET
Mandy, am yoak program full "
Awdy, no, Mr. Applewhite, it takes dan two sandwiches an' a cup ob to fill mah program."—Longhorn.

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Another Letter from the President of Fairbanks, Morse & Co., to every Farmer in the United States

*Fairbanks, Morse & Co.
Office of the President
Chicago*

Subject: 2,000-lb Scale \$14.85
500-lb Scale \$12.50

Here's another big surprise for you. — Every — as big, if not bigger, than was the "2" Engine. Every farmer knows about that.

It's almost sensational — a genuine FAIRBANKS Scale at the remarkably low price of \$14.85 for the 1,000-lb capacity, and \$12.50 for the 500-lb.

If this scale were not a FAIRBANKS, backed by all the years of FAIRBANKS reputation, a thinking man would hardly believe that it was a good scale because of the low price. But you know that Fairbanks, Morse & Co. have built their business on QUALITY products.

Every Bureau of Weights and Measures passes FAIRBANKS scales as "Correct". It is truthfully said — "if it's weighed on a FAIRBANKS there's no argument" — because it has Steel to Steel Bearings and Arrow-tip Beam. Yes — and a lot of other exclusive quality points. This scale has wide wheels and an extra large platform.

I am writing this because I personally am proud of this latest achievement of our organization. Go see it at your dealer's. You will be amazed. You'll hardly go through another day without adding this sturdy, reliable "watch dog of weights" to your farm equipment.

Cordially yours,
C.H. Morse
President.
FAIRBANKS, MORSE & CO.,
CHICAGO

"If it's weighed on a FAIRBANKS there's no argument."



GO TO YOUR LOCAL DEALER

see the scale and you'll buy it. A reputable dealer selling a reputable scale certainly is a strong combination.

If you don't know the local Fairbanks - Morse dealer, write us.

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THE FRED MUELLER SADDLE & HARNESS CO.,

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DENVER, COLO.

Mention Utah Farmer when you write

THE IRRIGATION OF WHEAT

(Continued from page 2)

and land plentiful, the real test of efficiency is not yield to the acre of land but yield to the acre-inch of water. Since in arid regions water is the chief limiting factor of production, its manner of use determines largely the population that can be supported. Figures 10 and 11 show the increase in yield of grain and straw for each inch of water above the yield where no

of irrigation that should be applied to wheat under the conditions of this experiment. This is the most profitable when either the acre of land or the acre-inch of water is used as the standard.

Summary

1. Wheat should probably not be raised extensively under irrigation; but a knowledge of its water requirement is important, because some wheat will probably always be raised on irrigated land.

growth of wheat increased its height more than that applied at any other time.

10. The number of kernels in each head is decidedly affected by irrigation water applied during early growth, and less so by that applied later.

11. The date of maturity of wheat was retarded by excessive irrigation.

12. Economy in the use of water was increased by the use of barnyard manure.

13. From 75 to 95 per cent of the yield of irrigated wheat under various

systems of irrigation was produced by the natural precipitation.

14. Twenty acre-inches of water spread over four acres of land produced more than three times as much wheat as where it was all used on one acre.

15. These experiments show rather conclusively that on the deep soils of Utah the best system of irrigating wheat is to apply three irrigations of about five inches each, beginning when the wheat is six or eight inches high and stopping about the time it is in blossom.

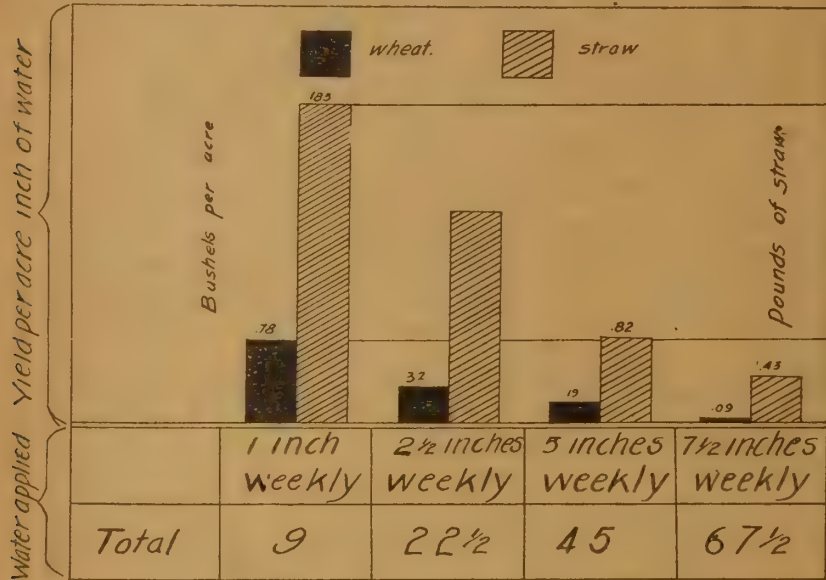


Fig. 10.—Yield of wheat grain and straw for each inch of water on plats receiving different quantities of irrigation water weekly.

water was applied. In figure 10 the results for weekly irrigations are given, and in figure 11 the results are shown for plats receiving water at various stages.

When seven and one-half inches of water were applied weekly, each acre-inch of water produced only .09 of a bushel of grain while one inch weekly produced .78 of a bushel of grain each acre-inch of water.

Figure 11 brings out in a very striking

2. The main literature on the subject, including seventeen bulletins of the Utah Station, is reviewed.

3. Results of four years' work conducted at the Greenville (North Logan) Experimental Farm are reported.

4. The highest yield of wheat was produced with three irrigations of five inches each, applied at the five-leaf, the early boot, and the bloom stages.

5. Irrigation water applied after

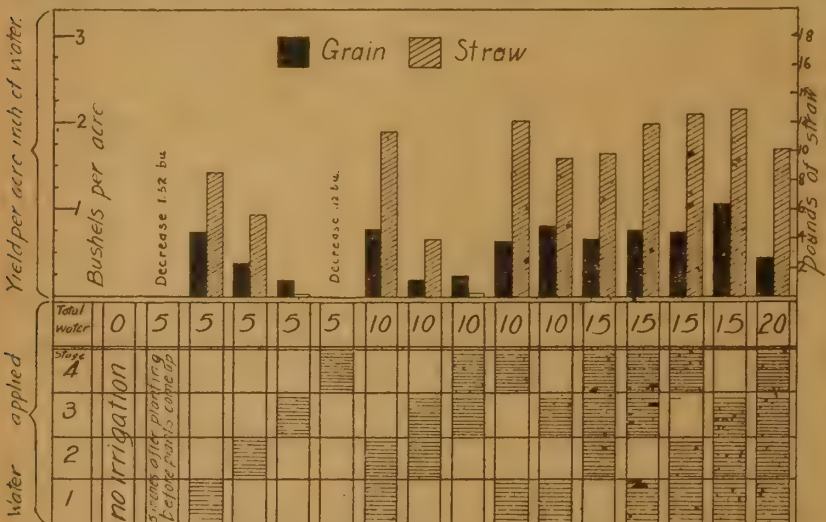


Fig. 11.—Yield of wheat grain and straw for each inch of water on plats receiving various quantities of water at different stages.

ing manner the relative economy of different methods of irrigation. The importance of the five-leaf stage in wheat as a time to irrigate is made clear on the plats receiving five and ten inches of water. The treatment giving the most economical use of water was three irrigations of five inches each applied during the first three stages in the growth of the crop. This was also the treatment giving the highest yield to the acre of land; consequently here we have the method

the grain was planted before it was up, and that applied after the dough stage, decreased the yield.

6. Where only one irrigation was given the best time to give it was at the five-leaf stage.

7. Where two irrigations were applied, the five-leaf and the boot stages were best.

8. Where three irrigations were given, the five-leaf, the boot, and the bloom stages were best.

9. Water applied during early

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Two registered Clydesdale mares, three and four years old. One team of draft horses; one driving mare. Call Andrew Knudsen, Supt., Utah County Infirmary, Provo, Utah.

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DRY-FARM FOR SALE



320 acres in Southern Idaho, 170 broken, 100 in wheat, all fenced, good barn and small lumber house. Address J. F. S. Care of Utah Farmer, Lehi, Utah.

NATURAL AFFINITY

"There seems," a northerner once observed to Senator Morris Sheppard, of Texas, "there seems to be a strange affinity between a colored man and a chicken."

"There's nothing strange about it," smiled Sheppard. "One is descended from Ham and the other from eggs."



Follow up the premium won at the state or county fair with a little judicious advertising. It will help make sales.

THIS YEAR IS THE YEAR TO BUY HOGS—

last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again. The best time to buy is when pigs are young. Write today.

RICHARDS LIVESTOCK CO.
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Jesse S. Richards Mgr.
(The West's best Durocs)

October Bargains

Our 4-year old Herd Boar — Defender — 4 spring boars, 10 spring gilts.

Spring Lake Stock Farm

Payson, Utah.

When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

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We carry a large stock of the Best Vegetable Parchment Butter Wrappers and Especially Prepared Ink for Printing the same. We furnish them Postage Prepaid at the following Prices, money to accompany order.

100	\$.90
200	\$1.25
500	\$2.25
1000	\$3.00

Send all orders to

THE UTAH FARMER
LEHI, UTAH

Ashlane Berkshires

Specials For Fall Breeding Season

BALLAMOAR'S MASTER—Our herd boar must go to make place for one unrelated; prize winner himself and father of many others; Anyone desiring a tried and proved boar cannot afford to miss this bargain at \$55.00.

LEHIGH—Strong bone and back; good head; first prize as senior yearling in Utah State Fair; A bargain at \$40.00.

TIMPANOGAS—Great length and very smooth; A splendid addition to any herd; second prize to Lehigh (above). \$35.00 makes him.

EAGLE ROCK—A junior of promise; good type; large bone; strong back; prize winner in very strong competition. His price is \$30.00.

Other boars of quality at prices within reach of all.

Some extra good youngsters at \$12.50.

Associated Ashlane Farms

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FRANK L. CRAMPTON, MGR.
RATES \$1.00 PER DAY AND UP.

THE TIN-CAN FARMER

By Stanley F. Morse.

Farmer Jones was a tin-can man; He lived and he ate from an old tin can.

Canned beans for breakfast, beef for dinner;

Canned stuff made his family thinner. Even in cans came his gasoline, And his tin-can cow's milk had no cream;

Canned peaches, strawberries, tomatoes and beans,

From his tin-can garden with its lack of greens.

Even his house was made of tin, And the half-fed people who lived within

Sometimes ventured to spend some "tin"

For an apple, orange, pear, or plum Which might just as well have been raised at home.

Till at last the farm adviser came

And said, "It is a beastly shame. These boys must have fresh fruit to eat,

And vegetables, too, and home-killed meat.

Why don't you raise some home supplies?

A garden's a profitable enterprise; And keep some hens, a cow, a pig, The labor of it is not big.

The boys and girls must join a club To teach them how to raise good grub."

The farm adviser went away, But soon returned another day.

A change he saw in home and man, And not a single old tin can;

A garden fine, an orchard fair; The house and tools in good repair.

The farmer and his wife explain With smiles, they have not worked in vain.

Our children in the club did win And now we're saving all our "tin."

POLITICAL ADVERTISEMENT

The Democratic Party Is The True Friend of The Farmer

No Single Legislative Act of Congress Has Had Such Far Reaching Beneficial Effect to the Farmers as the Federal Farm Loan Act Passed by a Democratic Congress.

The chief features of the Federal Farm Loan Act are:

Twelve Federal Land Banks are created in the continental United States with \$750,000 capital each.

Loans to farmers for productive purposes only will be made by the twelve banks through national farm loan associations.

Members of the farm loan associations must be borrowers and must take stock in the associations to the amount of 5 per cent of their loans.

Stock subscriptions are a dividend-paying investment and the 5 per cent stock subscription is deducted from the proceeds of the loan.

Based on its farm mortgages, each land bank may issue farm-loan bonds to bear not to exceed 5 per cent interest.

Proceeds of the bonds furnish funds for further

loans to borrowing farmers.

Earnings of the system go in full to the borrowers.

Interest rates to the farmers, it is expected, will be five per cent or lower.

A plan of amortization of loans is provided under which farmers may pay off the principal on terms that reduce the annual interest rate to not more than 3½ per cent.

Provision also is made for private joint-stock banks under Government supervision which may lend to farmers without requiring any investment in the stock of the bank.

Interest rates now paid on long-time farm loans average about 8 per cent. The net saving to farmers of interest and principal is expected to be over \$150,000,000 a year.

HOW DOES IT WORK OUT?

This has been explained by Congressman Moss of Indiana, one of the author's of the act.

"Every borrower when he makes an application for his loan agrees to subscribe to the stock of the local association to the amount of 5 per cent of his loan. The local association when it forwards its member's application for the loan to the land bank also agrees to subscribe a like amount to the stock of the land bank. When the loan is granted the land bank retains out of the face of the loan the amount of the stock subscription. Thus, if Mr. Jones makes an application for a loan of \$1,000, the transaction which results is as follows: Mr. Jones executes his mortgage for \$1,000 and the local association forwards it to the land bank; the land bank issues to the local association \$50 in par value of stock in the land bank and transmits \$950 of stock in the association and turns over to him the \$950 received from the land bank.

"The association must pay to Jones dividends on \$50 stock issued to him and in turn receives dividends on \$50 of stock, which it holds in the land bank. The land bank has issued bonds to the amount of \$1,000, which it has sold to the public. It pays interest to its bondholders on this amount and receives interest from Mr. Jones on the face of his mortgage, which is \$1,000. The land bank also has \$50 in cash which it deducted from the face of the loan to pay for the stock issued to the local association when it received Jones' application. This sum of \$50 is invested and its income helps to pay the dividends on the corresponding shares of stock.

"When Mr. Jones' debt is paid in full the land bank cancels the stock of \$50 held by the association, paying the association its par value; likewise the association cancels its stock issued to Mr. Jones and pays him the \$50 par value. Mr. Jones is no longer a borrower in the system, he is no longer a stockholder. He does not now help to create any business for the system and he is not entitled to share longer in its dividend distributions. That system is purely mutual and co-operative; it is owned solely by the borrowers, and every cent of its earnings which are distributed as dividends are paid directly to the borrowers in proportion that their loans bear to the whole volume of loans granted by the land bank."

Why did we want a Rural Credit Law? To facilitate the flow of money to the land and to give the farmer as "cheap" money as pos-

sible, saving to him the big commissions and usurious interest fees to which he had been subjected under so many years of Republican misrule at Washington.

What interest had the farmer been paying, including commissions and renewal charges? In some instances it amounted to 12 per cent, and even more. The average was 8½ per cent.

How did the old system work out for a loan of \$1,000? The farmer paid \$85 annually for the use of \$1,000. In thirty-three years these annual charges of \$85 amount to \$2,805. If the \$85 paid each year earns only 5 per cent compound interest, this will aggregate about \$3,595 for a compound interest alone, during the thirty-three years, which sum is lost to the borrower. Add it to the \$2,805 and we get some \$6,400 as the total cost and loss to the borrower of \$1,000 for the thirty-three years by the old way—and he still owes the original \$1,000 principal.

How does the new system work out—the Wilson Farm-loan Law? By the new method, with interest at 5 per cent per annum, paid 2½ per cent, semi-annually, and 1 per cent applied on the principal each six months together with all savings of simple and compound interest, the farmer pays in a total of \$70 each year, or \$2,282 in thirty-three years, but by the end of that time his debt is paid off in full. So, that the cost by the old system was \$7,400.00; by the new system \$2,282, giving the farmer a saving of \$5,118.

By the new system the farmer can pay off his debt almost without knowing that he did it. The total payments annually are nearly one-fifth less than by the old method, and they not only meet the interest, but by the Federal Farm Loan Law they discharge the principal also. Of course, the shorter the loan the less the saving, but the sooner the debt is paid. Thereafter all interest accrues to the farm owner.

The probable result of this thrift, as the Washington Post observes, will be the reduction of the number of farmer tenants. "The rural credits and good roads bill * * * should make the lot of the farmer much easier. The farmers have been obtaining good prices for their products and are generally prosperous, but the fact must be faced that the percentage of farmers who own their own land without incumbrance is extremely small.

"When Germany put her rural credits system into effect the percentage of farmer tenants was about as large as is the case in the United

States. Under the German credit system, however, nearly 90 per cent of the German farmers now own their own land.

"With federal aid to road construction and this new rural credits law it should not be long before the same fortunate condition brought about in the United States."

If applied to the present mortgage indebtedness of farmers, the Rural Credit Act will reduce the present average interest rate on farm loans from 8.5 per cent to 5 per cent, or less, while at the same time wiping out the principal of the present farm mortgage debt of the United States in from 15 to 40 years.

This statement, however, only faintly shows the possibilities of the new law to American farmers: Besides reducing the present interest rate, the new amortization provides for wiping out the principal of the debt. It will be possible therefore eventually to eliminate the entire present farm debt of \$3,598,985,000, besides reducing the interest by \$66,600,000. On the basis of 40-year amortization payments, the principal would be reduced at the rate of about \$90,000,000 yearly. The farmer is also given the opportunity to make new loans to extend his agricultural operations at as low a rate as merchants and manufacturers of the best credit standing. The loans, too, are long time, 15 to 40 years, so that a bad crop or two cannot take his farm.

Is it any wonder that the N. Y. "Evening Post" commenting on this legislation, declared that President Wilson was "warranted in making something of a ceremony of his signing of the Rural-Credits bill. * * * It is a piece of constructive legislation which is designed to supply something long and notoriously lacking in our financial system—something in respect of which most other countries have been far in advance of the United States. This has been frankly admitted by our most competent authorities. All political parties have been declaring for years past that American farmers ought to be able to get loans on easier terms. President Taft took the matter up, and worked hard to get something done, but failed entirely. It remained for a Democratic Administration to write this important law on the statute books. Taken with the Federal Reserve Act, and the establishment of a Federal Trade Commission, it makes up a record of legislation which no Republican Administration of recent years came anywhere near matching. Of itself it constitutes a powerful claim of President Wilson upon the approval of the nation."

The only opponents the Rural-Credits bill had in Congress were Republicans—something the farmer will not forget when he goes to the polls in November.

Ug. rem

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 13

LEHI AND SALT LAKE CITY, UTAH

OCTOBER 28, 1916

Prepare Now For Next Year

The present high prices that can be obtained for farm products, brings up some very important questions. What will be the prices next year? If the war should end next year, what about prices of wheat and other food stuff?

It is a pretty dangerous proposition to advise people what to do; if it proves right it's likely to be forgotten, and if it proves wrong it will be held

It may be interesting to know that a study of wheat prices during and following the wars of the last two hundred years shows that almost invariably the highest price is reached not during but some time soon after the end of the war.

Speaking of prices being higher after the war than during it, one authoring says:

going to do by way of preparedness to meet new conditions that must arise following the close of the terrible war now going on in Europe?

Every foot of ground that can produce food stuff of any kind should be planted. Not only should farmers plant the land they now have available and make it produce the maximum yield, but every one should pre-

Plant the waste acres and vacant lots, make every foot of ground produce something. Do not allow the corners on your farm, partition fences and ditch banks to produce weeds, but rather make them bring you money in the way of something that will make food.

Right now is the time to prepare for next year. Make your plans so



against you. A little study of conditions, however, may help all of us.

We may not be able to get \$1.86 for wheat, same as it sold on Chicago market this week. We may not be able to sell potatoes at the same price that a Utah County farmer received for his this week, \$1.30 per bushel, sacks furnished him. Nor can we expect to sell our hay like a farmer in Salt Lake County sold his for \$17.50 a ton in the stack. Let us take past history it may be repeated again during the next two or three years.

"It was true of our revolutionary war, of the Napoleonic wars, the Crimean, the Civil War, and the Franco-German war of 1870-71. There is not much doubt that it will be true after the present war, because when war ends the measures that Governments have taken to control prices and prevent extortion will be relaxed. The resumption of industry in general will inevitably cause speculation in a thousand directions, all of it pointing to higher price levels in general."

What are the farmers of this state

pare now to increase their production by clearing and preparing new land, draining swampy land so it will produce a good crop.

Suppose the prices of farm products are much lower next year than now, they will even then justify a supreme effort to product the biggest crops possible.

Crop reports show that all the surplus is being exported. It may be a real service that the farmer will be doing with increased production—feeding a hungry world.

you can secure your seed now and have only the best quality. A better quality of seed will greatly increase the yield per acre.

If there is vacant or waste land owned by some one who will not use it, lease it for the next two or three years.

There is nothing to loose in producing a maxium crop but there is a good prospect that you will be able to get good returns for all food stuff you can produce.

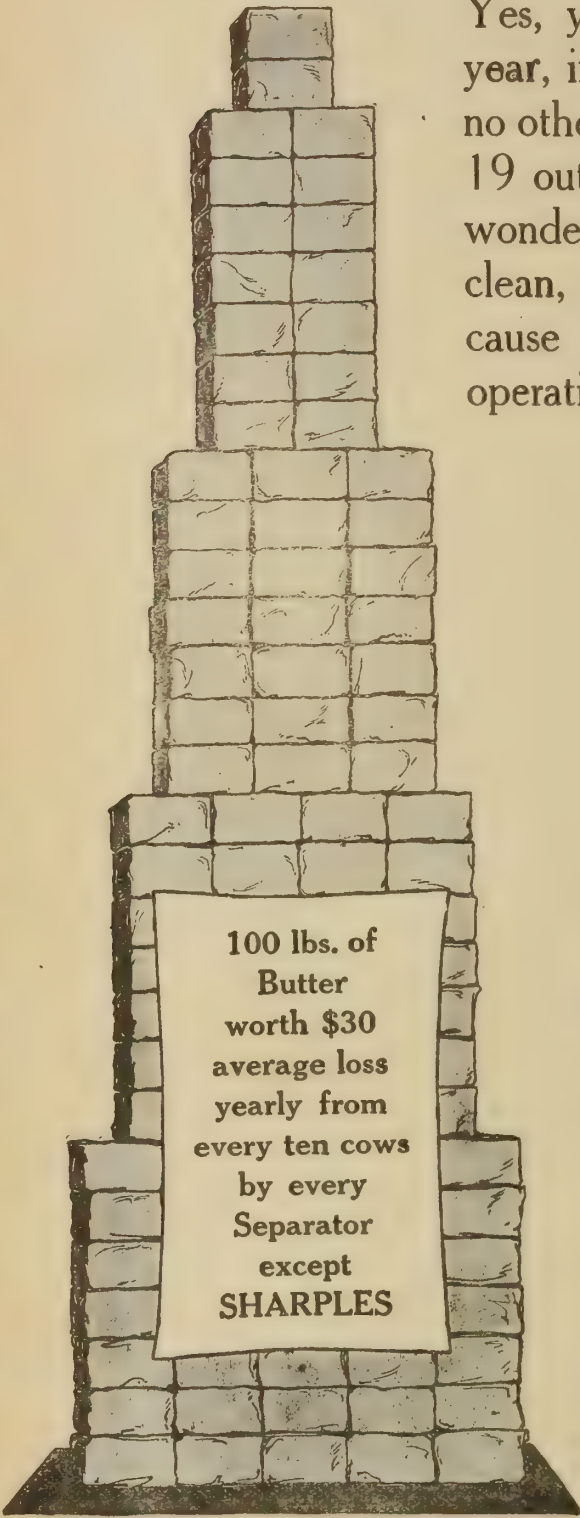
Prepare now for next years corps.

Lost 100 Lbs. of Butter

Yes, you certainly did lose that \$30 worth of butter last year, if you milked ten cows and did not use a Sharples. For no other separator skims clean when you turn it too slow---and 19 out of 20 people do turn too slow much of the time. The wonderful new Sharples is the **only** separator that skims, clean, regardless of how fast or how slow you turn it, because the "suction feed" makes the milk feed vary with the operating speed. The

SHARPLES SUCTION-FEED CREAM SEPARATOR

Will Avoid This Loss



100 lbs. of
Butter
worth \$30
average loss
yearly from
every ten cows
by every
Separator
except
SHARPLES

Will save you the pile of butter illustrated, over every other separator. The figures are based on proven facts taken from Purdue Experiment Station Bulletin 116, which sets forth the great loss of cream from turning ordinary separators below speed. The Sharples is the only separator that delivers even cream, too, at all speeds. Ruggedly built for hard service. Over a million users. Send for catalog to Dept. 104.

We also make the SHARPLES MILKER—the only milker using compressed air (broadly patented) which gives the good, firm squeeze that keeps the teats healthy. The only milker instantly adjustable to big-teated and small-teated cows—just turn a lever. One man can milk 30 to 40 cows per hour. Used on over 300,000 cows. Send for catalog 104.

SHARPLES FARM GASOLINE ENGINES—the highest grade farm engine buyable. Two complete sparking sets—no ignition troubles in damp or frosty weather. 2½ to 9 H. P. Catalog free.

Sharples Separator Co., West Chester, Pa.

JOBBER FOR UTAH, A. L. BREWER DAIRY SUPPLY CO., OGDEN, UTAH.

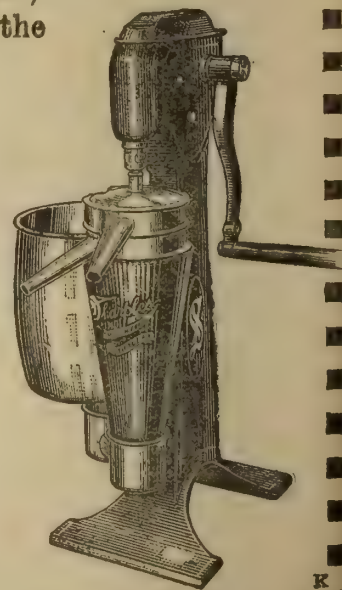
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Build Concrete Road For Permanence

By Wm. F. Long.

Every modern invention requires some corresponding improvement along the same line. Thus, the adoption of heavier projectiles and more powerful guns make imperative the use of more efficient armor plate for the protection of our ships of war; the invention of aeroplanes and zeppelins as fighting units, necessitates the masking of field operations. Likewise the adoption of the modern giant locomotive, together with its correspondingly heavy rolling stock, on our great system of railways, requires the bridges, rails, ties and everything else pertaining thereto, be made larger, heavier and more efficient. Such are the demands of Progress.

Our great seething, throbbing, ambitious public was not satisfied with the slowly moving horse and the load which he was capable of pulling, so invented the automobile, in order that the minutes between milestones could be cut and quartered, and then the motor truck, which could haul a load of five, ten or even fifteen tons, instead of one or two with the horse.

However, man no sooner began the use of these new contraptions, than he learned to his dismay, that his highways, which were designed for the horse-drawn vehicles, could not stand up under, or survive the effects of these new conditions of traffic. For instance he soon learned that the lasting quality of a Macadam road depended greatly upon the natural cementing quality of the stones composing it. Until the advent of the automobile and the motor truck, the binding material of the surface was disturbed by the horse's shoes and blown away by the wind; more binder was then chipped off the stone, compressed by the steel tired vehicles, and reformed by absorbing moisture from the atmosphere. The automobile prevents this remarking of the binder. The action of the rear driving wheels displaces not only the surface binder, but the road materials as well, scattering them beyond recovery. Later on rain penetrates the road, and softens the base and foundation. The road in turn settles, thus breaking the bond and permitting the loosened stones to be displaced.

The realization of these facts marked the beginning of an entirely new regime in road construction, and the demand for a type of highway which could be considered permanent under these new and varied conditions of traffic, has developed into what is commonly known as the Good Roads Movement. It is nothing more or less than the cry of a much abused public, which for years has been hopelessly burdened with so-called road taxes, which after their collection by the county road officials, were

sunk into highways that soon transformed themselves into veritable slunges of mud and dust, and were highways no longer. The public has awakened, and is demanding visible returns for their hard earned dollars and cents.

Thus it happened that the Good Roads Movement in this country today has reached mammoth proportions, and like "Safety First" is the slogan of the age. It is the very spirit of the Twentieth Century, the impassioned cry of the age, and any community which is not interested in this Nation-wide movement is dead



—it is not progressive. Some keenly thinking individuals defend progress as the measure of man's ability to shorten the minutes between milestones. What a far reaching definition that is: It leaves practically nothing uncovered. We must get there at any cost. Are you progressive; are you alive; are you interested in the Good Roads Movement?

Good roads, roads which are not only good today, but which will be good tomorrow, next week—or even twenty years from now, roads which are permanently good—these are the kind we must have.

What is a permanent highway? A permanent highway, first of all, is that type of highway which is being advocated by all those interested in the Good Roads Movement; it is that type upon which maintenance costs are so small that that item may be considered negligible; it is that type which will outlive the life of the bonds which are responsible for its existence, and which is serviceable for three hundred and sixty-five days of the year; it is that type which will survive

the effects of and stand up under the heaviest of automobile traffic, as well as to comply with the requirements for horse drawn vehicles. It is that type which renders road traveling a pleasure at all times, which offers low resistance to traffic, and concerning which the United States Government states costs but from seven to twelve cents to move a load of one ton over a distance of one mile.

What is a non-permanent highway? A non-permanent highway, first of all, is that type which was designed for traffic conditions which existed centuries ago; it is that type which can-

as tax payer, they have been studying and investigating the proposition for themselves, and in consequence have come to the unanimous conclusion, that the people, by endeavoring to keep in even passable condition, their present non-improved, non-permanent, old fashioned highway, are spending their money for something which is only temporary, at its best—something which cannot last. They are, therefore, playing a losing game—literally throwing money away. It is believed that there is but one satisfactory solution to the problem, but one way of stopping this waste of the tax payer's money—and that is, the construction of a modern, hard surfaced highway to replace the present road.

Building a permanent or hard surface highway, must be regarded as being a strictly business proposition. The people must be shown by conclusive proofs, that a permanent highway, will not be a drain upon their resources, a balance upon the wrong side of the ledger, but an investment of the first order, a money making proposition, a saving to the community.

How does a permanent highway pay for itself, and how does it net an appreciable profit besides, are questions which must first be answered in the minds of the tax paying citizens, before they can either intelligently accept or reject the proposition.

Other communities which have solved them satisfactorily, tell us that the cost of a permanent or hard surface highway, spread over a period of twenty years is less than the cost of an unimproved highway distributed over the same period of time. Accordingly, if what applies to other communities, applies to yours in this respect, the first question: How does a permanent highway pay for itself, is answered. In other words a permanent highway will pay for itself by costing no more than your present stretch of unimproved road.

The service rendered by highways radiating from a town may be measured directly by the tonnage which is hauled over them, and their economic importance is indicated by this tonnage and varies directly with it.

Only an actual count of traffic can determine the average number of teams hauling produce each day, their loads and the average distance traveled. From the count on a sufficient number of days, a close estimate of the average annual traffic may be had.

The unit by which hauling costs are measured is the ton mile. As previously stated, the cost of hauling on a standard hard surface, or permanent highway, will range from seven to twelve cents per ton mile, while on

(Continued on page 7)

Live Stock

PROFITABLE FEEDING

Wm. Olsen.

Judging by the prevalence of scrub stock on our farms, it is evident that many farmers do not feed liberally enough to force their horses, cattle, sheep and hogs to large and rapid growth.

In Nature the struggle for existence is fierce and constant. Wild animals are nearly always hungry and having to forage for a living makes them tough and sinewy.

Man protects his domesticated herds from their enemies and provides them with food. All they have to do is to eat and grow. The more

they eat, the more they grow—up to a certain point.

A large part of an animal's food is used for bodily maintenance. The surplus over this is used for growth, or the production of milk, wool or young.

What colossal foolishness to raise animals in the hope of profit and feed them with a grudging hand! Such animals will keep alive, but to make them grow fast they must be fed with liberality.

In all branches of stock farming breed weighs heavily, but feed counts for fully as much. To raise a profitable dairy cow, one that will give 9,000 pounds of milk a year, it is necessary to start with a good foundation of ancestry and feed the calf from infancy up with an almost lavish hand. The youngster must be kept growing. It must never know what hunger means. It should have plenty of exercise so it will come up to the rack every day with a good appetite. A pinching policy at the feed-trough produces scrubs, no matter how long a pedigree an animal may possess.

One reason why we have depended upon importations from France for our Percheron horses is that many American breeders do not feed as judiciously as do the shrewd and skillful peasants of La Perche.

It is easy to overfeed, but from the appearance of live-stock throughout this country it seems easier for the majority of farmers to give too little than too much.

A well-bred colt of a draft type will eat an amazing lot of grain, hay and grass during his first year. When he can be made to mature into a \$500 or even a \$300 animal it is folly to stint him at meal time.

Making baby beef—meaning a thousand-pound steer at 12 to 18 months—is no more nor less than a stuffing process. Starting with good stock the feeder keeps his calf eating and growing from the day of its birth. It must be fed so plentifully and judiciously that it never loses its "calf fat."

The same principle works with hogs, sheep and poultry. If they are fed all they will readily clean up they will make more gains for the amount of feed consumed than if they are handled with that extreme economy that is "penny wise and pound foolish." The self-feeder is becoming popular.

Absolute rules for quantities of feed are worthless. The feeder must understand principles and make his own rules to fit his particular circumstances. The only general rule worth remembering is that an animal should be given all it will eat and keep in good condition. This can only be determined by experiment.

POULTRY

SELLING POULTRY

No doubt you may have already noticed the tendency among farmers to market large amounts of poultry. Presumably this is on account of the high price of grain. I have been making some investigation both locally and in surrounding markets. One buyer, who gathers from house to house using an auto truck of four decks, tells me that in some cases he is buying all the poultry there is on the farm. He says too often this is not always stock that the farmer is selling off preparatory to leaving the country or taking up other business, but that the farmer feels it is profit-

Your Live Stock Will Pay Big Profits

if you will do your part. When you move your stock from pasture to barn—change from juicy green feed to dry feed—you always expect trouble. Change of feed—lack of exercise and confinement—produce constipation and other disorders, which mean loss and worry to you.

Pratts Animal Regulator

will positively keep your stock in prime condition at little cost. It sharpens the appetite—improves digestion—expels intestinal worms—regulates the bowels—makes stock healthy and productive.

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exterminates lice and ticks—kills disease germs—keeps pens and stables sweet, clean and sanitary. Absolutely safe and pleasant.

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The deposits of this bank amount to more than \$7,000,000.

The increase during the past three months alone has been over \$700,000.

DEPOSITS

1912.....	\$3,200,000
1913.....	3,800,000
1914.....	4,500,000
1915.....	5,300,000
June 22, 1916	6,470,289
Sept. 22, 1916	7,197,364

Walker Brothers Bankers

Resources over \$7,800,000.
SALT LAKE CITY



able for him to sell rather than feed it at the present price of grain.

Another instance, the buyers for a large packing house are buying more poultry than ever this year but they say they always get more poultry during the years when grain prices are high than they do when they are low.

I am sure that it is an unwise move the farmers are making in selling off their poultry too closely, because, though grain prices are high, they are receiving more for their poultry products than ever. I contend in our reading matter that the poultry raiser cannot afford to disorganize his poultry plan for the little saved in the price of grain. At times the above plan might be logical with most farm animals, but at the most chickens are not heavy feeders and the few dollars saved in the price of grain would not make up for the hundreds of dollars that would be made in poultry products.

This last year egg producers, including both market and pure bred, had big demands and at higher prices than usual. To the poultry raisers who are selling off to closely with the expectations of buying eggs in the spring and hatching their chicks, there is a possibility that they will be badly disappointed even though eggs should not continue to be so high priced. A scarcity of poultry would mean a scarcity of eggs. They would be hard to get and in turn many would have to hatch late or not at all.—H. H. Johnson.

WHITEWASH FOR

POULTRY HOUSE

A whitewash that disinfects, kills mites, and brightens the poultry house, recommended by the agricultural college poultry department, is made as follows: Slack 5 quarts of rock lime with hot water to about the consistency of cream. To this add 1 pint of crude carbolic acid or zenoleum, and 1 quart of kerosene. Stir thoroughly, and dilute with twice its own volume of water. Apply with either syray pump or whitewash brush. When properly prepared, this solution accomplishes three things: First, the zenoleum acts as a disinfectant, killing germs. Second, the kerosene penetrates the wood and remains intact for some time, and is effective in destroying mites. Third, the lime is whitening, and brings an atmosphere of sweetness and light to the house.



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MODEL L.

BLANCHING CELERY

J. S. Gardner.

Proper blanching is half the battle of successful celery raising. Most markets refuse the unblanched article entirely and those of us who grow it for home use know that green celery is unwelcome on the table. The heart blanching by the plant itself is much better, and properly blanching celery is all heart.

In the "new celery culture" the plants are set six inches apart each way in beds, so only the outer rows need shading, for blanching is really another name for shading. The plants are sometimes grown in double rows so as to reduce the labor and material to half of what is needed when single rows are used.

No matter which of the many methods of blanching is used the proper time is always the same—when cool fall weather has come to stay. Banking before hot, burning weather is over may induce rust, especially if earth is used.

Earth is the best and commonest blanching material as it is usually the cheapest and imparts a nutty flavor not secured without it, but its use makes it necessary to set the rows or beds far enough apart so plenty of earth for banking can be secured.

Hilling may be done by hand with a small turing plow or with a celery hiller, but when horse tools are used, it is usually necessary to finish the work with a hand hoe. A better job can always be done if tillage throughout the season has been so thorough and judicious that the soil is fine and easily handled.

The earth should cover the entire plant below the lower edges of the leaves in such a way as to drain the plants well, as too much moisture will result in dirty and perhaps rotten celery. Special care must be taken never to hill nor handle the plants in any way while they are wet. As the plants grow and the soil settles, a little more earth may be added to keep the mounds up to the leaves.

The greatest economy of garden space may be secured by using blanching boards, held together at the top by stiff, wire hooks and at the bottom by a little earth banked against them. The same boards can be used several years if carefully stored under cover, so the cost is not excessive.

Some less usual methods include the use of a drain tile carefully placed about each plant; building paper or even newspaper wrapped around the plants; and individual patented veneer sheets, similar to those sometimes used in protecting young trees from rabbits. These individual methods, however, require so much work, care, and patience that they are unprofitable on any but very small plantings for home use. Earth blanching is best, especially for the late crop.

THE FARM GARDEN

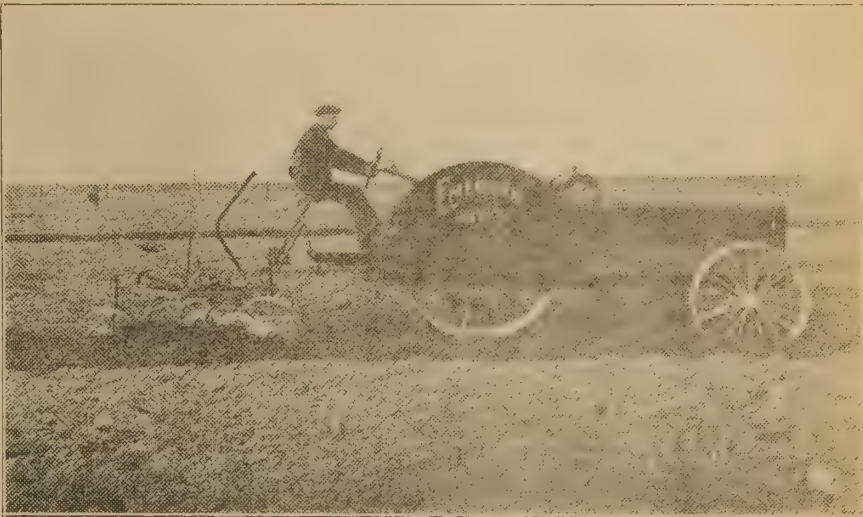
Whether the garden is to be a success or not depends, in great measure, on its location with reference to the home, and to the farm buildings. It should be easily reached both by those who care for it, and by the housewife who does most of the harvesting. It should be so placed that plows and other tools do not need to be brought far, for this takes time and labor, and makes the garden work expensive. Then, too, if the garden is close at hand, spare times now and then can be used in going over it.

The garden is generally well drained, but if it is not, laying a few lines of tile in the garden will frequently pay. Early vegetables will not do well in a water logged soil and late ones are injured almost as badly. On the other hand, most vegetables need plenty of water to thrive and produce well. Their roots are so shallow they cannot go down to a deep water table in dry seasons as trees can, so artificial watering may save the garden and it is a great convenience to have some sort of water supply near at hand.

The soil should be fertile. Vegetables are heavy feeders, but they will return, many times over, the value of the manure used in building up the soil. Barnyard manure is the best general fertilizer to use, both for its plant food value and for its tendency to lighten up tight and clayey soils which drain poorly and remain "cold" until late in the spring. The loose, mellow soil resulting from applications of barnyard manure is also essential in growing the root crops, which are likely to be misshapen and distorted in too tight and stony soils. Root crops are more easily harvested in a mellow soil, too. A dressing of three inches of manure is not too much but it should be well rotted if it is plowed under in the spring.

Gardens that were plowed last fall will show the good effects of (1) weathering, and (2) a reduced number of grubs and other pests that have escaped freezing, as well (3) as the opportunity for rotting of the manure through winter. If your garden was not plowed last fall, it should be done as early as the ground is at all fit to work now.—J. S. Gardner, Missouri Experiment Station.

The nutritious value of fodder corn is very much lessened if struck by frost. The ears should just be glazed and the stalks should be green to make first-class ensilage.



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FALL MEASURES TO COMBAT ROSE DISEASES

Rose gardeners should take advantage of the fall season, to make their plants as free as possible from disease by methods that can not well be followed during the growing season. It is true in general that whatever the disease, the affected portions of the plants should be cut out in the fall and shortened bushes sprayed. It is assumed, however, that spraying will not have been delayed until fall, but will have been carried on as a control measure at frequent intervals since spring. The diseased wood removed in the fall, together with the old leaves and debris under bushes, should be burned. In case of attacks by rusts, canker, and leaf spots, the diseased wood or leaves should be removed and burned even during the growing season.

For powdery mildew, the control spraying for the summer spores should be with lime-sulphur or potassium sulphid. After cutting back in the fall, the plants should be sprayed with lime sulphur or strong Bordeaux mixture. The control spraying for rusts should be ammoniacal copper carbonate. The fall spraying should be with a strong Bordeaux mixture. For leaf-spot, leaf-blight, and anthracnose, the control sprays may be either Bordeaux mixture or ammoniacal copper carbonate, and the fall spraying should be with the former.

Leaf Blotch.

Leaf blotch, also known as black-spot, is a common and very injurious disease. The first symptoms are the appearance of irregularly shaped blackish spots on the upper surface of

nearly full-grown leaves. In this stage the trouble may be controlled by several sprayings with ammoniacal copper carbonate or Bordeaux mixture, but if these precautions are not taken another stage of the fungus develops in the same spots. The fungus in this later stage lives over the winter on fallen leaves and sets up a new infection in the spring which can only be prevented by raking up and burning the fallen leaves and spraying the dormant bushes with strong Bordeaux mixture.

Another disease to which roses are subject is canker, which starts with the appearance of small redish patches on the green parts, generally of 1-year-old growth. Such infected areas may increase until the entire stem is surrounded and may extend for several inches along the branch. The only advice to be given is to cut away rigorously all diseased branches, and it may be necessary to cut back entire bushes if badly infected. Cover the exposed surfaces made by this cutting with paint or tar. This diseased material must be burned and the dormant bushes sprayed with strong Bordeaux mixture in both the autumn and early spring.

The colored parson was discoursing on Daniel in the lions' den. At the conclusion of his sermon he roared:

"Now, kin enny ob you sinners tel me why de lion didn't eat Dan'ul?" Nobody answered.

"Wal, Ah'll tell yer ornery bunch o' onbelievers," he yelled, "'twas 'cos the most o' him wuz backbone, an' th' rest wuz grit."—Exchange.

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The Utah Farmer is recognized as one of the best mediums of reaching the people and it is only natural that when a campaign of any kind is on they would want to use our columns.

The political and policy advertisements are bought and paid for just as any other advertisement at our regular rates. The fact that one party may use more space than another is no concern of ours.

These advertisements do not indicate any political preference on our part nor editorial support. We are neutral or independent in these matters. We consider these advertisement legitimate business for it attempts to sell nothing by which a reader could be deceived but is simply a declaration of principals and from that point of view is in a way educational.

These advertisements often carry an important message to the people and should be carefully read.

Don't live too much in the future, be just as happy as you can today.

A gentleman never forgets his good manners even when in company of a boy.

What this country needs to weed out is the numerous get-rich-quick schemes that prey upon the credulity of the people and rob them of their hard earnings. Some of them have already been trapped; others will follow.

The hard job looks a good deal more difficult while we sit and contemplate it than it does after we have rolled up our selves and gone to work at it.

Farm laborers are at a premium in some localities this fall; abundant crops and the general demand for help is given as the cause. Beet digging is on, some schools are having a week vacation so as to allow the children a chance to help in the harvest, without missing their school work.

Making every dollar work. Make every dollar earn something. Anything on your farm that is worth a dollar that is not earning something should have your consideration, and make it work or get rid of it. Poor policy to have dead things lying around—things that are not earning something.

SPREAD THE STRAW

It never has been a very general practice in our state to burn the straw. There are many, however, who do not seem to know the value of a ton of straw for fertilizing their land. The best way to utilize the straw is to feed it to stock or use it as a bedding and return it to the land in the form of manure. Never burn it or allow it to waste in stacks or sheds, return it to the soil by spreading it on the ground before plowing. Machines are on the market that are made for spreading the straw.

COMMON COURTESY.

Are we drifting into a condition where we do not show courtesy to each other? Are we mindful of each other's likes or dislikes?

Are we willing to be as kind and courteous to the other fellow as what we expect from them?

In the rush of work and worry we sometime forget to show a little courtesy to our friends, neighbors and those with whom we work.

A kind word, a smile, some times the slightest acknowledgment, is helpful to the other fellow.

No one can offer a reason why we should be discourteous, but many reason can be given why we should show common courtesy to one another.

VALUE OF GOOD ROADS.

The other day when it was storming and considerable rain had fallen, some of our roads showed what wet weather will do to them.

A trip of several miles was made during the storm in an auto and a careful study was made as to the conditions of the road. It happened that a few miles of concrete road was a part of our trip. The difference was very noticeable, on the cement road, we could make just as good time as if it were not storming.

Stormy, wet weather is a hard test on any road. The value of a road is the all-around-year use you can get from it. A road is like anything else, is valuable when it gives you good returns for the money spent.

It is a poor policy to buy something just because it is cheap. Permanent Roads that will give us good service every day in the year, rain or shine, are the ones we should build when our money will permit.

CARE OF FARM MACHINERY

When you have finished using any implement or tool put it away, protect it from the fall and winter storms.

To properly care for the farm machinery means

that it must be well selected, kept in good repair and adjustment, oiled thoroughly, cleaned before housing, and it must have all wearing parts well greased when not in use, and painted when necessary, and it must be properly housed.

At least one-half of "good care" consists in keeping the machinery properly repaired, in good adjustment, and thoroughly oiled when in use. To neglect any of the lines of care mentioned, means serious damage and loss to the machine.

Machinery is going to cost more, the cost of raw material shows this, and it is only another reason why we should be more careful with our machinery.

The only reason we keep saying something about this is because we see so much machinery out in the open, exposed to the wind, sun and storms.

OUR TAX PROBLEMS

Much is being said and considerable printed about our tax problems. Few will deny, however, that our taxes are continually increasing, with no increased net income from which to pay them.

The voters of the state this year have to vote on an amendment to our Constitution in regard to the problem of handling our taxes.

What do you know about this amendment so that you can vote intelligently upon the question?

At present our taxes are not equally distributed, something must be done to help the situation. It seems to us that the farmers of this State should have something to say about our tax problems.

It is practically impossible for the farmer to dodge the tax man, but a great many men do, those who have property that should be taxed that now goes "scott free."

All the farmer has can be seen and he pays taxes on it all. This is not true with many other classes of people. The sooner we awake to the seriousness of the tax problems now before us, the sooner we will solve them.

FIX UP FOR WINTER

The chilly winds during the last few days gives us more than a hint of winter and the cold weather that will come.

Fall days are busy ones for the farmer, but there comes a lull after the harvest before the winter, when many little things should be attended to. Look to your fences, for often the cattle are allowed to run in the nearby fields. See that the gates are in good order.

The winter wood and kindlings should be gathered and the yards cleaned up. The poultry house needs repairing and spraying. How about a comfortable place for the calves or colts to keep them warm?

Are the roofs of barns and sheds in good order and winter shelter for live-stock in good shape?

There is much work to be done, the little odd tasks that one is so apt to overlook or forget and which mean so much in the saving of dollars and contributing to the comfort of the dumb beasts of the farms. Animals cannot do well unless they are comfortable; that which contributes to their comfort adds to their well being at the same time.

It is an uneasy conscience that knows of the suffering of any dumb creature dependent upon it. Fix everything up before winter comes, and you and all the creatures on the farm will be the better for your labor.



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Improved Powers Combined Well Boring and Drilling Machine

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

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Stops friction. Makes a perfect bearing surface.

Dealers everywhere

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Mention Utah Farmer when you write.

BUILD CONCRETE ROADS FOR PERMANENCE

(Continued from page 3)


other surfaces the cost will be from twenty cents to forty cents, depending of course upon the season of the year, the efficiency of maintenance and other factors. In that connection, authorities calim that to move a load of one ton on a dirt road requires a tractive effort of 100 pounds; 40 pounds on a macadam road; 25 pounds on brick and 20 pounds on wood block, asphalt in cold weather, or concrete. We thus see that a horse can pull twice the load on a wood block, asphalt or concrete pavement as he can on a macadam, or five times the amount that he can on an earth road.

In calculating the cost of the permanent hard surface highway, we used an amount of \$13,000 per mile for first cost (this for a road 16 feet wide) and \$30 per mile per year for maintenance. As a matter of fact there is but one type of permanent highway which has been built for this low figure, and which has been maintained for the almost negligible amount of \$30 per mile per year, and that is the Portland Cement Concrete Road. It represents the only type of permanent pavement within reach of all the people, other types ranging in price from \$17,000 to \$30,000 per mile for first cost, with considerably higher costs for upkeep. The concrete highway is the type which the Utah State Road Commission has been constructing in this state for the last, four years; it represents the type of construction satisfactorily built by the people of Salt Lake County, Davis County, the cities of Provo, Logan, Ephraim, Park City, etc., and why? Simply because this type of pavement is the most economical from all view points.

Today in the United States there are over 70,000,000 square yards of concrete pavement, an amount sufficient to pave a road 16 feet in width for a distance exceeding 7,000 miles. Such a road would stretch from Salt Lake City to New York and all the way back to San Francisco. The first pavement laid was at Bellefontaine, Ohio, a town about the same size as Provo, twenty-four years ago. That pavement, laid under conditions which were governed by no previous experience, when the use of concrete itself was in its infancy, and which today, is not only in existence, but giving efficient service, is a striking measure of the possibilities of this type of pavement construction.

So you thus see that a concrete pavement is not a novelty or an experiment. Indeed, it is the result obtained after years of careful investigation and study by our highway engineers, in an effort to develop a type of permanent roadway, which would satisfy a long felt need, which would be low in first cost, would stand up under all kinds of traffic, adapt itself to varying conditions of climate and which could be built from materials found in every state of the union.

According to this latter property, and aside from cheapness in first cost, durability and long life, the concrete pavement is the one logical type of permanent road construction for the State of Utah; for what state, I ask you, is better supplied with good concrete materials—cement, sand and gravel—than this one? Almost every hill and mountain possesses an abundance of all the constituents. A concrete highway, built with home labor and home materials, will be strictly a home product, and all the



Clear Your Cellar of Pipes and Heat

Have a furnace but keep your cellar roomy and so cool that you can store fruit and produce without its spoiling. You may say this is impossible because you are thinking of ordinary furnaces but it's done every day with the Caloric Pipeless Furnace.

The One Register heats the entire house. There are no pipes to absorb or resist heat or to require cutting holes in your walls. The triple casing prevents heat spreading through the cellar. The easy furnace to install in any house new or old in the

PIPELESS CALORIC FURNACE

TRADE MARK

The Original Patented Pipeless Furnace

The furnace for your farm home. It burns coal, coke or wood and soon pays for itself in saved fuel.

The Caloric makes your home modern. No more carrying fuel and ashes up and down stairs. Every room is uniformly heated. It will heat any sized house, even churches, and schools and stores.

Guaranteed to Save 35% of Your Fuel

There are three reasons for this big saving. 1st, the warm air reaches your rooms by nature's direct method of circulation and there are no pipes to absorb or resist the heat. 2nd, our double ribbed firepot and specially patented combustion chamber produce perfect combustion thus insuring thorough burning of the fuel and a much greater heating surface. 3rd, our specially patented triple casing, insulated with two air spaces, prevents any heat from radiating into the basement. This is the only successful one-register furnace and no other furnace can claim these three big features.

Give the Caloric a fair trial. If it's other than as represented we'll make satisfactory adjustment. The firepot is guaranteed against cracking or burning for five years.

Endorsed By Thousands

"Trying to heat a ten-room house with two base burners. Grate and range was a proposition, but the Caloric Pipeless Furnace transformed that house into a home of comfort and we now heat the entire house with 10 tons of soft coal yearly. It is the only furnace giving perfect satisfaction in the cellar. Small space is required, no pipes to bump heads on, no heat to spoil canned fruit." F. S. Plasterer, Huntington Ind.

"We consider the Caloric the coal man's enemy as we have used approximately three tons of hard coal per season for house of seven rooms and bath. One of my neighbors has already taken out his pipe furnace, while two others will take out their pipe furnaces and install Calorics this summer. The Caloric does not heat the basement and takes up very little room." — John Neumann, Sauk City, Wis.

RENTERS: ATTENTION!


Special Offer—Although your landlord will not go to the expense of tearing out walls for installing a pipe furnace, he will put in the Caloric Pipeless, as it can be installed in a day without the usual expense and muss. Give us your landlord's name and we'll write him.

Ask the Caloric Dealer— Or Write For Free Book

If there is no Caloric dealer to demonstrate get our catalog and name of nearest dealer with copy of our guarantee.

THE MONITOR STOVE & RANGE COMPANY

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Hay, Grain, Potatoes,
Alfalfa and Sweet
Clover Seeds.

Write us

Vogeler Seed Co.

Salt Lake City, Utah.

GREEN CONCRETE MIXERS

No matter how small the job all concrete should be thoroughly mixed. The old method of shoveling is tiresome from a physical standpoint and is very unsatisfactory for consistent mixing.

Our foot, steam, or gasoline power mixers will solve the problem for you. Made in several sizes and endorsed by all who have used them. Made in Utah.

Write for information and bulletins. GREEN MACHINERY and MFG. CO. American Building 338 So. Main St. First Building north of Post-Office Salt Lake City, Utah.



TAKE THE TIME

Investigate this exceptional buy now.

This section is and will in the future be the banner farming section of the State. It will pay you to look it over.

50 acres of very fertile land at Elberta, Utah. Raises all crops successfully.

Within short distance of two good mining camps. Good market for all garden truck.

On railroad giving excellent facilities.

Prior water right at \$1.00 per acre if used.

Write us today or see

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Salt Lake City, Utah.



VIOLINS

Mandolins, Guitars and all other string instruments. Mention this magazine and ask for catalog and 6-day trial offer.

Daynes-Beebe Music Co. SALT

money needed for its construction, remains in the community. What other type of permanent construction, I ask you, can Utah, and Utah alone, produce.

There are other important benefits to be derived from a permanent highway aside from those which can be measured directly in dollars and cents, which will necessarily be of high monetary value to the community.

In the first place, a hard, smooth, easy riding road, without a single rut, pit, hole or bump, a road which would be just as serviceable on a rainy day as on a dry one, a road without dust and non-slippery—would make for that county a veritable mecca, to which thousands of automobilists would be attracted. Instead of merely driving they would actually glide through your wonderful valleys in their cars, and see for themselves one of the Edens of America. They would purchase gasoline and oils from your merchants, they would stop at your hotels, some of them would purchase your land and locate permanently, and land values would immediately soar. By the advertising you would thus obtain, Utah would be known all over the United States as having the very finest roads in the world, * * * a by no means bad reputation. And what, I ask you, bespeaks more plainly or more effectively the character and intelligence of any community, than does the character and the condition of the roads in that community. Then again the lack of resistance to traffic, the elimination of mud and dust, the absence of excessive wear and tear upon wagons and automobiles, and the ability of one to use the highway for 365 days of the year, are advantages which no tax-paying citizen can afford to overlook. Another important item is the fact, that after this permanent highway, which requires such a small sum for its upkeep, has once been constructed, a goodly part of the money, which was necessarily used for keeping the old road in passable condition, could then be spent on the feeders to this highway, and the other roads of lesser importance throughout the country which heretofore have been sadly neglected, on account of the lack of necessary funds.

CHARACTER OF FARMING ON LOANS

C. W. Thompson, U. S. Department of Agriculture.

Bankers are more and more requiring of farmers who wish short-time loans statements as to their business similar to those that are required of merchants and manufacturers. In certain cases bankers supply farmers with specially prepared blanks or rate sheets which the farmer is required to fill out before his application for a loan is considered.

"One important purpose of the rate sheet is to show how far the farmer devotes his energies to raising a single crop, or how far he diversifies his farming and gives attention to the raising of foodstuffs for his family and feed for his animals. If, for example, farmer A has a garden and raises enough vegetables and fruit to supply the family needs, if he keeps enough poultry, pigs, and other live-stock to meet the requirements of his household for eggs, meat, milk and butter, if he provides enough pasture, hay, and fodder to feed his live-stock he has this advantage, that when the cash crop is ready for sale in the fall, it

is not tied up with a lien to meet a season's advance for food or feed. He is in a position, therefore, to sell his cash crop whenever the marketing conditions are favorable. The relatively favorable position of such a farmer assists him in commanding the confidence of lenders.

"On the other hand, consider farmer B, who comes to the local merchant and makes credit purchases of bacon, cornmeal, and canned goods for table use, and who goes back to his farm with a bale of hay or a sack of feed in his wagon box. In his field there are patches where the yield is poor because of low soil fertility and in different methods of cultivation. The only enterprise on the farm is a one crop growing and this crop is mortgaged in advance to supply the food and feed purchased in town and consumed on the farm. Farmer B has little if any credit at the bank. He gets a limited store credit on an advancing basis from a local merchant. His is the most expensive kind of credit and probably he is the farmer who is the least able to pay for it.

Responsibility for the One-crop System

"In some regions the lender even more than the farmer is responsible for the continuance of a one-crop system of farming. This is especially true where bankers refuse to extend credit to farmers except on the basis of a single crop, such as cotton in the South or a cereal crop in the North. Such a mistaken policy can be corrected only to the extent that the banker realizes the evil effects of one-crop farming and undertakes to co-operate actively with the farmer in the extension of credit on a proper basis.

"It is scarcely possible to lay too much emphasis upon the practical importance of the method and character of farming as a factor affecting interest rates on farm loans. Every agricultural region has its own peculiar problems of adapting farming methods and practices to local conditions. There are progressive bankers in various parts of the country who realize the importance of co-operating with the farmers in promoting the kind of farming that will be permanently beneficial to the community. This suggests a common interest between bankers and farmers which should be made the basis for further co-operative effort.

Attitude of the Loan Agency Toward the Farm-loan Business.

"In many regions the banks are not accustomed to dealing with farmers to any extent, especially with tenants and croppers, and the latter, therefore, must obtain their loans from other sources. This is especially true in the cotton States, where the system of advances from merchants to farmers still prevails. A few banks are breaking away from this traditional attitude, however. In one community of South Carolina the banks are actively soliciting business with croppers and renters as well as with farm owners. One of these banks began this policy 15 years ago on the assumption that many small accounts of this character properly scattered would be safer for the bank than a few large accounts. The experience of these banks has led them to become more active than ever in the extension of their farm-loan business, while the farmers of their vicinity generally are obtaining loans on better terms than



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a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

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will clean it off without laying up the horse. No blister, no hair gone. Concentrated—only a few drops required at an application. \$2 per bottle delivered. Describe your case for special instructions and Book 8 M free. ABSORBINE, JR., the anti-septic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; allays Pain and inflammation. Price \$1 and \$2 a bottle at druggist, or delivered. Made in the U. S. A. by W. F. YOUNG, P.D.F., 142 Temple St., Springfield, Mass.

Make Money Sawing Lumber

Every farmer who has a woodlot can make money in his spare time sawing lumber with an "American" Portable Saw Mill. If he has no woodlot, he can do "custom-sawing" for his neighbors at big prices. An "American" mill will saw 2500 feet a day with 8 H.P. farm engine. Profits mount fast. "American" Mills are designed especially for farm use. Easy to move and anyone can operate. Famous for quality for years. Get an "American" and start to make money.

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Salt Lake City, Utah.
Stock of mills on hand.

WILKES

THEATRE PLAYERS

ALL NEXT WEEK

"THE MIRACLE MAN"

A play with a thrill and one that teaches the lesson of unselfish love—portrayed by Miss Nana Bryant, Stewart Robbins and a big cast.

Matinees, Thursday and
Saturday

Prices 15c and 25c; boxes, 50c.
Night prices, 15c, 25c, 35c, and
50c; boxes 75c.

UTILIZE FRUITS

With cold winter days so near, the thoughts of dainty, tasty jellies and delicious jams made right at home are natural. They are cheaper than substitutes—and, oh, so much better. The West's grapes and apples are now available. Utilize them this year—you'll have success by using

Western-made Sugar

those living under similar agricultural conditions elsewhere. "It is realized that the farmers in some sections of the country are accustomed to carrying check accounts with banks and are as familiar with the requirements of banking relations as other business men. There are other regions, however, where many farmers have not had such experience with commercial matters and where the bankers could be of practical assistance in making the farmers better acquainted with banking methods. The banker should remember that the farmer is not subject to the periodic visits of an examiner, requiring that certain matters receive attention promptly within definite time limits. This is one reason why farmers do not always realize the importance of meeting their obligations at specified dates. One plan that has proved helpful in this connection is to have the banker give the farmer the benefit of ample written notice with reference to the maturity of interest and other payments. "Existing banking methods and practices as related to farm loans are often criticised by reason of the unwillingness or inability of certain bankers to carry over farm loans until the farmer is prepared to meet his obligations. Complaint is often heard of cases where a banker, with a little extra effort, could make arrangements to carry over the loan of some farmer without, but where in fact an apparent difference to the welfare of the farmer is shown. It is interesting to learn, however, that many bankers manifest exactly the opposite attitude, and use every resource at their command, including such assistance as they can obtain at larger financial centers, in order to carry over their farmer patrons until such time as payment on loans can be made conveniently. "Where banks are active in developing farm-loan business they realize the importance of understanding the requirements of safe and progressive agriculture and also the importance of educational work among farmers in the interest of improved agriculture. Each knowledge gives the banker a better understanding of the merits of farm loans and at the same time tends to raise the standard of farm-loan service. These considerations not only make possible a safer and larger loan business for the banker but also lead to a decrease in the interest rates paid the farmer."

SHORT TALKS BY A FARMER

A. H. Relegow.
Rain is extremely high but I always found it profitable to feed the hives a little daily during the winter. Put away a few tons of Sugar Beets and you can easily get at them during the winter for your chickens will lay more eggs if you feed them a few and if fed to the dairy cows, it means a larger cream check and it keeps the cows in a healthier condition. Don't let any one destroy the birds in your place by trapping or shooting the feathered pets which remain with us during the winter as they eat a lot of weed seeds. Even the much liked Sparrow will eat thousands of alfalfa Weevil during the summer. Don't buy the boy an air gun or a ratty two, it means he will kill a good many of the useful birds and if not, else, nine times out of ten he will break a neighbors window pane and

get into trouble in many other ways. If short on feed it pays to sell a few of the cattle and take good care of the rest, you are sure to lose money by only half feeding them. Build a shelter now, it means comfort for the stock and saves feed as well.

You are now through with your farm implements, put them under shelter, grease the bright iron parts so they will not rust and it will save you time and money next season, for if you leave them in the field when you get through using them you will be considered a wasteful farmer and it hurts your credit with your merchant as well as your banker.

Select your best pullets now, and the hens you wish to keep for breeding stock and dispose of the balance as early as possible but don't sell too close on account of feed being high, as eggs and poultry will be higher than you have seen them for many years. Disinfect your coops and keep grit, oyster shell and dried beef scraps before them if you want plenty of eggs during the winter.

Don't waste time talking politics, it is poor business at it's best. I always felt sorry for the fellow who crows like a barn-yard rooster, hollering "Hurrah" and prides himself on always voting the Democratic or Republican Ticket from A to Z. Pick out the man whom you know is honest, careful in his affairs, considerate of his fellow men and the man that you know you can trust with public affairs. Vote for him, it doesn't matter on which ticket he is.

RETAIN THE GOOD POULTRY

Two factors are working to reduce the stock of poultry on hand. One is the high price of poultry, both live and dressed, which obtains at present, and the other is the high price of feeds. The latter condition will likely continue throughout the year. From reports received, we find that in many places farmers are selling practically their entire stock because of these two conditions. Under ordinary circumstances, we believe this to be a mistake and that it will be well for our

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Before you buy any Engine—Read my Book, "How to Judge Engines." Tells how to distinguish a High Grade Engine by the difference in cylinders, pistons, valves, ignition, etc., with less cost for fuel, up-keep and repairs. Book Sent Free together with my LOW FACTORY PRICES and Easy Payment Plan. "Built by Experts" 90-day trial offer, etc. Address

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readers to retain their usual amount of laying and breeding stock. In all probability, eggs will continue to bring good prices and, even though grain is high, the price of eggs will probably parallel it. Those who sell off and depend upon buying their eggs or breeding stock in the spring in order to replenish their flocks will run the chance of being disappointed. Our advice is don't sell too closely. However, the standing advice always in order, is: Sell everything that is not first-class stock.—Pennsylvania Farmer.

Dairy Land

Richland Acres

TILE DRAINED
"THE HEART OF CACHE VALLEY"

Beet Land

In Buying Land You Should Consider Its Location and The Quality of Its Soil

RICHLAND ACRES is a farm subdivision of 3000 acres situated on the floor of Cache Valley three to five miles from Logan, Utah.

It is served by

- The Utah Agricultural College and public schools.
- The Oregon-Short Line Railroad—Two beet stations.
- The Amalgamated Sugar Company—Logan plant one mile distant.
- The Borden Condensed Milk Co.—Wagons pass through the area.
- Mountain States Telephone and Telegraph Co.
- Utah Power and Light Co.—Power and light service.
- Rural Free Delivery.

RICHLAND ACRES HAS

- Tile drained, silt loam soil one to five feet deep.
- Every element requisite for plant food, according to actual analyses.
- Land adapted for sugar beets, alfalfa and garden truck in particular.
- Reclaimed swamp lands of unexcelled fertility for celery culture.
- Unsurpassed primary water rights and excellent flowing wells of purest water.

RICHLAND ACRES IS BEING SOLD ON EASY TERMS AT \$100.00 TO \$200.00 PER ACRE—ONE FOURTH CASH—THE BALANCE IN TEN ANNUAL INSTALLMENTS, BEARING 6% ON DEFERRED PAYMENTS.

Logan Land and Drainage Company

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LOGAN LAND AND DRAINAGE CO.
Logan, Utah.

Please send me illustrated book on **RICHLAND ACRES.**

Name

Address

I am interested in ☐ beet land ☐ dairy land

HOME

THE INVALID'S ROOM— ITS FURNISHINGS AND CARE By Dr. R. O. Porter.

It may be safely said that no home escapes a certain amount of sickness. Therefore a brief discussion of the invalid's room, its furnishings and care which may be applied to any home may serve some useful purpose here. In the first place the necessity of a separate room especially prepared and devoted exclusively to the use of the sick person and his attendant cannot be too strongly advocated. Two of the first steps in the treatment of disease, especially in the acute stages are first, absolute rest in bed; second, quietness.

Any physician will agree that the chances of the patient's recovery are greatly increased if these two conditions are fulfilled, and any person who has been acutely ill will testify to the fact that neither of these conditions is completely fulfilled unless the patient is given a room separate from the rest of the family and removed as far as possible from noise and excitement. In most cases the patient will go to bed of his own accord because it is a physiological necessity, but unless some special preparation is made by other members of the family or attendants it may be impossible for those physiological requirements to be satisfied. In other words it may be impossible for him to rest. It should be borne in mind that a person in health is generally incompetent to decide which influences

are disturbing to a sick person and which are not, and it should also be remembered that the patient himself will often deny that the ordinary excitement of daily life is delaying his recovery because he may not fully realize it and also because he does not wish to "be a bother" to the family. Therefore we may say that as a rule sickness in the home should be confined to a room especially prepared for the patient.

In selecting a patient's room a number of important points should be considered.

1. Position.
2. Temperature and sunshine.
3. Ventilation.
4. Heating.
5. Furnishings.

I. Position. The room should be selected as far as practical from the living room and kitchen, and the outside surroundings should also be taken into consideration. For instance, if two rooms are available and one is located on a noisy street or near a railroad track or factory, and the other is further removed from these noises the latter should be selected, other things being equal. The playing of a piano, the noise of the sewing machine and many more trifling influences are frequently very disturbing and all of these things interfere with the patient's rest. A noisy door should be attended to. Squeaking hinges should be oiled. Slamming may be remedied by tying a thick cloth around one knob, passing it over the latch and tying the other end around the other knob so that it acts as a noiseless wedge when the door is closed. Attention to these small items is of more importance than is sometimes thought.

II. Temperature and Sunshine. In hot weather a north room is generally more desirable than a south room, and other things being equal an east room is ordinarily more desirable than a west room. This, however, is not an arbitrary statement and the comfort of the patient, sunlight, etc., should be determining factors.

Sunlight is an extremely important consideration and the room should be so situated that at least part of the day direct sunlight can be admitted. This has not only a cheering physical effect on the patient, but sunlight is one of the most effective germicides and possesses many curative advantages.

III. Ventilation. Good ventilation is an absolute necessity. Windows on two sides will facilitate a quick and thorough change of air. Drafts can be avoided by placing a screen in front of the open window or around the bed to break the current of air. It is a mistake to consider that cold air is in any way injurious to a patient. The only danger is chilling the patient, which can be overcome by extra blankets, etc. Thorough ventilation should be insisted upon even though the air is cold. If the patient is cold an effective way of making him comfortable is to tuck a woolen blanket over him beneath the rest of the covering. Contrary to tradition night air is not injurious and ventilation should not cease at sundown.

IV. Heating. The hot water system of heating is best from the standpoint of evenness of temperature, but whatever the means of heating the important points to observe are evenness of temperature and to avoid over-heating. Cool air is refreshing, hot air depressing.

V. Furnishing and Equipment. It is desirable that the furnishings be



"Young man, the best tonic for you is the right kind of food. I suggest for Breakfast

Ghirardelli's Ground Chocolate

It's easily assimilated — it's extraordinarily nutritious — and it is supremely delicious."

It comes PROTECTED—as all chocolate should—in 1/2-lb., 1-lb. and 3-lb. hermetically sealed cans.



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Absolutely Punctureproof

Double Service Tires are made double the thickness of the best standard make tires.

This 100% greater wearing surface naturally gives that much more mileage and service. The average of 12 miles of tough

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These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—the air space and pressure being the same. They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use in the U. S. government and European War service. Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer:

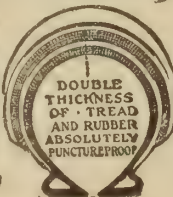
PRICES

Tires Tubes		Tires Tubes	
30x3 in.	\$ 8.60 \$2.30	36x4 in.	\$17.45 \$4.65
30x3 1/2 in.	10.85 3.10	36x4 1/2 in.	21.20 5.60
32x3 1/2 in.	12.75 3.20	36x4 3/4 in.	22.50 5.75
32x4 in.	15.75 4.20	37x4 1/2 in.	23.80 6.30
34x4 in.	16.70 4.35	37x5 in.	25.30 6.50

All other sizes not included in above list also furnished. Non-skids at 10% additional. Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.

Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Descriptive folder upon request. Write for it.

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Fine Improved Irrigated Farm

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Great Bargain Fully Paid Up Water Right

in one of the best canals in the State. 160 acres all fenced and in cultivation.

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Long time and low interest above cash payment. Low price for limited time—must be snapped up quick.

Miller & Viele

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Salt Lake City

RELIABLE FARM BARGAINS

90 acres near Garner, Idaho; 125 acres in grain this year, 20 acres in alfalfa, 40 acres of fine pasture land, 46 acres of water under a good canal system. A great bargain at \$30 per acre, on good terms.

50 acres near Idaho Falls. All under a high state of cultivation, with good improvements. Has been producing a big crop for a number of years. First-class, free, independent water right. 350 acres in alfalfa, balance in meadow hay. One of the best ranches in the Snake River valley. For sale \$80 per acre, on good terms. Will consider some exchange in Utah.

acres near Elwood station, in the Bear River valley. Near good school. On the main county road. Full water right from Bear River canal. \$115 per acre, on good terms.

4 acres north of Brigham City. Will consider trade for property in Davis or Salt Lake county.

60 acres of sagebrush land, all under the Bear River canal and all subject to water at a very nominal cost. Three-quarters of a mile from railroad station. Only \$35 per acre. Ten years to pay, at 6 per cent interest.

13 acres of good farm land, about one-half a mile from the city limits of Garland, in the heart of the rich Bear River valley. 50 acres in alfalfa, balance in plow land. Full water right. Only \$125 an acre, on good terms.

These are just a few of the fine farms and ranches we have for sale in all parts of Utah and southern Idaho. Come in, write or telephone if you want to buy or sell a farm. We can help you get what you are looking for.

We trade city homes for farms.

KIMBALL & RICHARDS,
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"The firm that tries—and satisfies."

Is the "Imported" Bug in Your Sugar

Some people have a craze for things from over seas. When, as a matter of fact, U. S. made goods, especially food products, excel the world in purity and quality—and they are cheaper.

Utah-Idaho Sugar is made in sanitary factories, in these mountain states, where pure air is a great sterilizer. The finished product is the recognized standard of sugar perfection. There is no better whether it be imported or the price double.

The finest pastry and confections are made with Utah-Idaho Sugar. It also makes good jelly. This sugar is a sure preservative because it is 100 per cent pure. Housewives everywhere are beginning to appreciate Utah-Idaho Sugar, and will not accept substitutes.

UTAH-IDAHO SUGAR
ABSOLUTELY PURE

There should be nothing in the room selected from the standpoint of utility, which cannot be kept clean easily or which adds unnecessary care. A sick room should be immaculate. The furnishings should be plain and simple, the colors subdued, and the wallpaper designs inconspicuous.

The ideal furniture is of white enamel which may be washed frequently without injury.

The ideal bed is a single white enameled one, high enough to permit of examination by the doctor without inconvenience to himself, the patient or the nurse. The hospital type of bed has noiseless wheels and is small enough for the nurse to manipulate, move, "make up," and to care for the patient without too much bending or exertion. It should have an adjustable back rest.

The bedding should be light but warm. The mattress should be even and resistant with a rubber sheeting three feet wide across the middle. The sheets of partly bleached muslin are satisfactory from standpoint of durability and are soon fully bleached with the necessary frequent washings. Several single woolen blankets are desirable, light and warm. The patient may use one or three as required. A light comfort of down, wool or cotton may be used with wool blankets if desired. A spread which is light and easily laundered at home is made of the white ripplet with one-half inch crepe stripes. The ordinary bed spread is objectionable because of weight and is more difficult to wash. The pillow of medium softness is good and one that is harder is useful in propping the patient up in bed.

An invalid table adjusted to the side of the bed is a great convenience, or one which may be made at home is fashioned of three pieces of wood like a small bench. This passes across the body. A table obviates the necessity of uncomfortable bending and reaching, or the bearing of the weight of the tray with things that spill.

A side table with drawer and lower shelf is a necessity to the patient for private use—letters, handkerchiefs, etc.

The room must contain a cot and bedding, a dresser or a clothes closet and a chair for the use of the nurse. Chairs also for callers should be at hand.

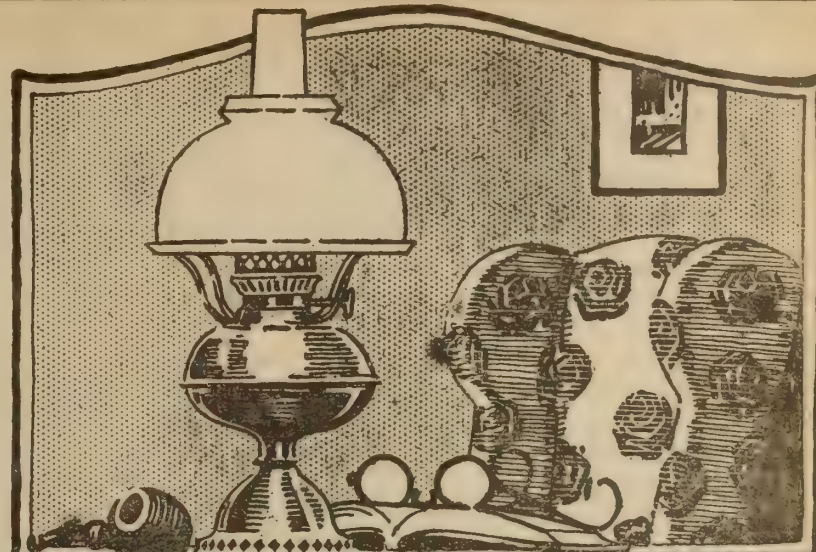
There should be an especially prepared cupboard for all dressings and medicine, and other things used in the care of the patient.

Briefly then, the sick room should be quiet, sunlit at least part of the day, well ventilated, evenly heated and equipped with plain furnishings which shall be easily kept clean. The walls should be painted or calcimined and cleanable at any time. Paper should not be used, partly for sanitary reasons and partly because any wall paper will draw tedious attention, especially if it has a prominent design such as a large geometrical figure, or bunches of flowers or grapes.

The curtains should be of white, washable, boilable muslin, or of a not-too-fine bungalow netting. Nothing too fine to stand frequent washings should be used. The screens should be of white muslin gathered on adjustable rods, since they can be easily replaced.

The floors are best of hardwood or covered with linoleum or painted. Round corners are most desirable. Small rugs may be used to walk upon, or better still, rubber mats.

All furnishings then, should be plain and durable and capable of standing thorough disinfection.



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How to Finance a Drainage District

In the following interview Mr. R. A. Hart Senior Drainage Engineer for U. S. Department of Agriculture answers some very timely questions on the subject of financing drainage districts.

In view of the fact that lands in need of reclamation by drainage are practically unproductive and almost worthless, how is the average man to raise the necessary funds to do the work?

The financing of drainage districts is one of the first and most important problems arising in connection with reclamation by drainage, for in addition to the land being largely unproductive and of little present value, it is often heavily encumbered already and the owners as a rule are unable to offer other security for loans. In any event, it would be difficult to secure long time loans with low interest rates as is required.

Economics demand that the cost of reclamation shall be borne by the land, or more properly, by the increased returns from the land.

The drainage statutes require that the benefits of reclamation must exceed the cost plus any incidental damage.

As a matter of fact, the increased returns from lands reclaimed by drainage frequently amount to more the first year than the total cost of drainage and in general the increased re-

turns during the first two or three years after drainage more than pay the cost of redemption. This is true whether the lands are almost entirely unproductive and therefore enjoy a proportionately large increase or whether they are producing nearly maximum returns and are benefitted only slightly, since the costs of reclamation are proportioned according to the relative benefits under the terms of the statutes.

It will readily be seen, therefore, that the greatest cost falls on the lands producing the least returns and least able to stand the cost of improvement. Under the statutes, the necessary funds are raised by annual assessments so that only a small part of the total amount required is available at any one time. It is necessary, however, that the reclamation be accomplished at once, and this in turn requires that the entire fund be available at once.

But with the land already heavily encumbered, and the owners unable to offer other security, how may this be accomplished?

The most satisfactory method is to issue drainage district bonds. Such a proceeding is authorized by the drainage district statutes and has proved very satisfactory and has many advantages.

What are some of the advantages?

(1) In the first place the entire fund required may be raised at once. This permits of the letting of contracts for the complete reclamation immediately and at lower unit cost. Materials and supplies may be purchased in large quantities at minimum cost. Freight and other transportation rates will be lower on larger lots. It also makes possible the use of machinery and labor saving devices which not only reduce the ultimate cost but expedite the reclamation so that a minimum number of crops are lost. Furthermore, reputable and experienced contractors may be interested and closer and more efficient inspection and supervision may be given.

(2) Funds may be secured at a low rate of interest. The statutes prescribe a maximum rate of seven per cent, but drainage securities are in great demand at six per cent. The statutes also provide that the bonds cannot be sold for less than par so there is no opportunity for juggling the issue. Bonds are sold after a competitive letting and the interest rate having been once fixed cannot be increased as in the case of mortgages.

(3) Drainage district bonds constitute a long time loan. By the terms of the statutes such issues run for not less than ten years nor more than twenty years. As a rule the bonds are serial and are retired according to their serial numbers, over a period of years. It is customary to have the annual assessments during the first year or so cover the interest charge only. Subsequently the annual assessments are large enough to pay the interest charge and to provide a sinking fund for the retirement of the bonds. The assessments are thus very light at first but as the land is restored to full productiveness they become larger. As a matter of fact, it is possible to escape any assessment the first year by making the bond issue large enough to include the first year's interest. Thus the cost of drainage is paid entirely by the increase in crop returns and does not represent a bur-

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den directly on the owner.

(4) Drainage district bonds are a tax lien on the land and therefore

come ahead of any other encumbrance, previous or subsequent. From this it follows that, however heavily

encumbered the land may be already, it is still possible to raise the necessary funds for draining it by issuing drainage district bonds. And the holders of mortgages cannot complain of this situation since it means simply that a way is provided for converting their dubious security into one that is gilt-edged, and all this without involving any expense or extra risk to them.

(5) The drainage assessments are added to the regular tax rolls and collected in the same manner as general taxes. Thus a landowner cannot pay his state, county, school and other taxes without paying his drainage improvement tax, and in this way the remaining landowners within the district are protected against his default.

Do the drainage district statutes compel the landowners to bond their lands for reclamation purposes?

The statutes merely authorize the raising of the necessary funds by annual assessments and compel the landowners to pay according to the benefits derived. The method of securing the funds for immediate work is optional

with the landowners in each particular district. The statutes provide the machinery by which a bond issue may be floated and they provide for an election within the district by which it is determined whether or not a majority of the landowners desire to issue bonds.

In the event that a majority of the landowners vote in favor of a bond issue is there no way in which a landowner whose assessment is small may escape having his property bonded?

There is a special provision in the law that permits any landowner to pay his assessment in full, before the bonds are issued, and thus escape having his land bonded and escape the payment of interest. It is to the interest of both the district and the individual, however, to have all the lands within the district included in the bond issue. So far as the district is concerned, the demand for the bonds will be greater, the larger the proportion of fairly good land and so far as the individual is concerned, his money can command a higher rate of interest than he will have to pay under the bond issue. Should he desire, he may usually purchase bonds of the district in the amount of his assessment or other amount.

What part will the new Federal Rural Credits be likely to play in the financing of drainage districts?

The Rural Credits law is so new that it is a little early to judge of its application to special situations but there are one or two points in connection with it that should be considered. It may safely be assumed that the Federal appraisers will be required to be very conservative in their estimate of security offered for loans. The loan value of lands in need of reclamation by drainage is very low unless the prospective value of the lands after redemption is considered. But this value is speculative and it is questionable whether the appraisers would regard it highly.

It must not be forgotten, however, that the reclamation of over-irrigated and alkaline lands does not stop with the simple installation of drains. In some cases there must be a great deal of subsequent treatment of a special nature and in any event there must be changes in irrigation practice, methods of handling, etc., as well as the purchase of new implements, new fencing, seed and supplies and the hiring of additional labor, all of which necessitate additional outlay.

Moreover, the land, as has been said, is often heavily encumbered with unsatisfactory mortgages having high rates of interest. The Federal Loan act provides for the retirement of such mortgages.

It will be seen, therefore, that after the drainage is accomplished there is ample opportunity to make use of the Rural Credits plan and there is no doubt that it will prove as great a boon to the operator of reclaimed lands as to any other.

WHERE DAD SHONE

A club man who poses as a humorist was having his shoes shined.

"And is your father a bootblack, too?" he asked the boy.

"No," said the bootblack. "My father is a farmer."

"Ah," said the humorist as he reached for his notebook to make an entry, "he believes in making hay while the son shines."

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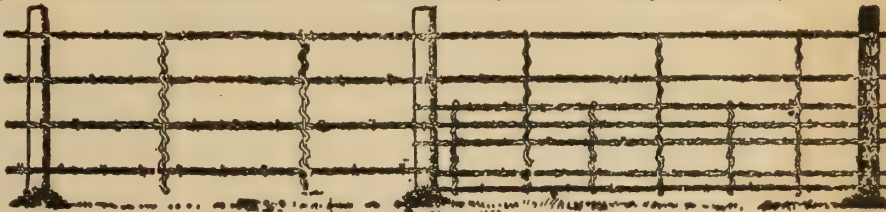
Do it the new way, the cost is but a fraction of the old, and you will not have it to do again annually. Stretch the wire and apply—

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VOTERS OF UTAH:

You will have the opportunity November 7th to vote on an amendment of Article 13 of the State Constitution, relating to Revenue and Taxation.

Many of you have been told that this amendment will increase taxes on net proceeds of mines and thereby reduce the taxes of those who do not own mining property.

Will that be the result? If so, then why are not your taxes lower NOW, as net proceeds of mines increased FIVE times between statehood and 1915 and THIS year are almost THREE times what they were last year?

Have your taxes come DOWN as mine proceeds went UP? They have NOT.

Do you think your taxes will ever be reduced by giving the tax gatherers MORE TAXING POWER?

Wouldn't you rather keep your present Constitution, which LIMITS the taxing powers?

Have your public officers ever failed to SPEND ALL THE TAXES THEY CAN COLLECT?

Do you know this amendment allows property to be CLASSIFIED and taxed at DIFFERENT RATES, without saying whose taxes will be raised and whose lowered? If, as you may have been told, this is intended to reduce taxes on homes, or household goods, or farms, WHY DOESN'T IT SAY SO? Was it because they intend to do something they haven't told you about? Read the amendment and try to find the place where it says ANYBODY'S taxes will be LOWER.

Look at Section 9 of the amendment. It says Legislative appropriations must not exceed the rates allowed in Section SIX, and Section Six says NOTHING about rates, which means there is NO LIMIT. Your present Constitution fixes a limit. If this change were made intentionally it is an outrage; if it is a mistake, how many other mistakes are there?

Do you know the amendment WIPES OUT ENTIRELY that provision of the Constitution which says taxes shall be UNIFORM and EQUAL on ALL property? WHY? So they can tax some of you MORE than others--and this doesn't mean MINES, as mines are treated separately in another Section.

Do you know the amendment also permits DOUBLE TAXATION of companies or corporations--not only MINING companies, but ALL companies, including YOUR company when they decide to put that burden on you?

Do you know this amendment proposes to take power from men ELECTED by YOU and give it to men APPOINTED by SOMEBODY ELSE, thereby destroying your local self government as to taxation?

Do you know the State Board of Equalization says Revenue and Taxation should be ENTIRELY ELIMINATED FROM THE CONSTITUTION, and that this same Board is the father of the amendment and of the new tax law which has caused so much trouble all over the State this year?

We, know, as you know, that taxes are high—too high on everybody—because the people of the State have not insisted on the careful expenditure of their public funds. The need of the times is not INCREASED TAXES but REDUCED EXPENDITURES all down the line, so that all of us may have better opportunities to prosper and investors be encouraged to put their money into Utah enterprises instead of being driven from the State by excessive tax rates and the threat of worse to come.

We do not argue the cause of the mines in this statement. We ask you to forget that Utah mines exist, or assume that they ought to be taxed to the limit and beyond, if you will. Then consider this amendment as it affects YOURSELF. Read it. Understand it, if you can, and then vote for it if you are SURE it was framed for your benefit, as you KNOW the Constitution was.

But if you do NOT understand it, if you are NOT sure it is intended to benefit and protect you, PROTECT YOURSELVES with your votes on Nov. 7th.

If adopted, this amendment will be the SUPREME LAW of Utah, and if you are in doubt, it is your PRIVILEGE, your RIGHT, your DUTY to

VOTE "NO"

Utah Chapter, American Mining Congress

Boston Building, Salt Lake City, Utah

This statement is made because there has been a state-wide campaign conducted to prejudice the public mind against Utah's mining industry and, in connection therewith, to establish the impression that the amendment affects ONLY the taxation of mines. The Utah Chapter, American Mining Congress, resents the attempt to create such an unjust prejudice and challenges all statements that the amendment contemplates only increased mine taxation. Additional information on the subject will be sent to any interested citizen on request.

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

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This Herd Bred, Raised and Sold. h Boar and Sow Grand Champions the World's Fair held at Frisco last year. Both Sire and Dam, till in the herd. If such breeding rests you, write for illustrated catalogue. Stock of all ages for sale all times.

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last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again.

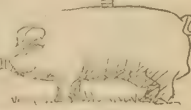
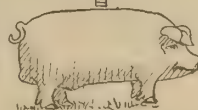
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200	\$1.25
500	\$2.25
1000	\$3.00

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LEHI, UTAH

OPENED JAN. 1ST, 1913



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FRANK L. CRAMPTON, MGR.
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RATES \$1.00 PER DAY AND UP

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Our 4-year old Herd Boar — Defender — 4 spring boars, 10 spring gilts.

Spring Lake Stock Farm

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Ashlane Farms offers exceptional Berkshires of this fall's crop at prices within reach of anyone just starting in the business. Get the boy interested in farm life by purchasing a pair of registered Berkshire pigs. You will be surprised at the care and interest he will take in them. Don't buy him a Shetland pony, or a puppy dog, but get him something that will return profits.

As a special inducement to you we are offering 2 month old pigs, from some of our best sows and by our champion herd boar, at \$12.50 per head. Order before they are picked over.

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TO ALL INTELLIGENT VOTERS---

Edison and Ford Gives Sound Advice

New York, Oct. 6, 1916.—Thomas A. Edison and Henry Ford conferred with Democratic National Chairman McCormack to-day. They also lunched with him and Secretary of the Navy Daniels. The four talked for two hours about getting the wage earners' vote for President Wilson.

Mr. Edison Said:

"Give the people the facts and it will be a Wilson landslide. I have always been a Republican, but I put my country above party. In a world crisis with the fate of America in the balance, I would take shame to myself behind the American who has given us peace with honor, prosperity with justice and preparedness without militarism."

Mr. Ford Said:

"Like Mr. Edison I am a Republican. I cannot stay with a party that puts office seeking first and America last. The President has saved the United States from the horrors and desolation of international war.

His domestic policies have given new strength to the legitimate enterprise, protected the worker, emancipated the children, and destroyed the evils sapping the courage of America. He is a great President and the greatest American. Woodrow Wilson stands for America, and undivided allegiance for equal justice and the welfare of the many.

"Against him are the forces of rapacity, special privilege, eager to get back their loaded dice, the exploiters of children and greedy concessionaries. It is their millions against Americanism."

Answer to Hughes and Defense of Wilson's Mexican Policy

"If our speculators in Mexico suffer pecuniary loss as the result of recurring revolutions, that is a matter for future consideration, when stable government and peace are fully established in that country. It is no warrant for shedding the blood of Americans. To sacrifice the life of one soldier for all of the dollars investors or speculators have ventured in Mexico would be the supremest criminal folly. * * * President Wilson is dealing with it as best he can. We may not entirely agree that his course is better than that of his distinguished predecessor, nevertheless we should endeavor to uphold his hand. * * * It is not an hour for either little politics or sensational journalism. The clamor of the jingoes should not be allowed to drown the voice of rational, deliberate statesmanship." — VICE-PRESIDENTIAL CANDIDATE FAIRBANKS, IN AUGUST, 1913.

Mr. Voter, What Is Your Answer?

This is the People's Year as against Trusts and Monopolies that Prey on the Public

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 14

LEHI AND SALT LAKE CITY, UTAH

NOVEMBER 4, 1916

Reasons For a Cow Testing Association

Alex Lofgren.

There is one best way of learning the cost of keeping a cow and that is by membership in a cow testing association. One may secure this information by keeping careful record, but with the cow testing association you have an experienced man who checks up with you and should quickly discover any mistake.

The cost of membership is so small when compared with the amount of information and good one can get out of it. The number of cows, will govern the cost, usually there are from 500 to 700 cows in a testing association. It cost about one dollar and fifty cents for each cow for the year. Surely it is worth this much to know how much it costs you to keep a cow, to learn the amount of milk, amount of butter fat and cost of feed to produce the milk.

The high price of hay this year is another good reason why one of these association should be organized.

A member in one of these association last month saved nearly one dollar per cow on his feed bill over the preceed month, by feeding a cheaper ration recommended by the tester, having the same feeding value but more relished by the cows, while the average flow of milk remained the same.

Co-operation besides the testing can be carried a little farther and where feed stuff of any kind must be purchased, it can be done in car load lots for different members, again making a saving that would more than pay for the cost of membership.

The tester can help in many ways. To illustrate in one association he made a monthly test of skimmed milk in order to keep a check on the efficiency of the separator. These results are very interesting. Average skimmed milk tests for one month was .243 of one per cent butterfat.

Average skimmed milk tests for another month, six months later was .019 of one per cent butterfat.

Total saving in butterfat .224 of one per cent.

There were 22 cream separators owned by members of this association separating daily an average of 5,000 pounds of milk. Thus by increased skimmed efficiency 11.2 pounds of butterfat per day or a total of 2,049.6 pounds for the period of 183 days were saved. At 27.2 cents per pound this had a value of \$557.47.

The co-operative ownership of pure-bred bulls can more successfully be carried on because of the association. One man might not be able to buy a good sire, but two or even three could

join together in owning a good bull.

Another reason for these association is to find out the scrub cow, the boarder cow. When you know costs of feed and milk production, you know whether the cow is profitable or not. During the first six months of one association, seventy cows were disposed of for beef, because they would make better beef than producers of butterfat. This was a little over ten per cent of all the cows in the association.

There is nothing that will increase the value of grade, as well as pure-bred cows, as will records of production.

The purchasing of dairy cows can be well taken care of by one of these associations.

Do you know what the production in either pounds of milk or butterfat amounts to in a year's time for the individual cows in your herd? Do you know what the feed costs per cow amount to? Do you know whether or not you are feeding the most economical and productive ration that you might feed? Do you attempt in any measure to balance your feeding ration? Do you know whether the production of your herd today is greater than six, eight, or ten years ago? Have you any realization of how much the net profits of your herd would be increased if the five lowest producing cows were replaced by just two good cows? A man who is a member of a cow testing association is one of a group of twenty-five to thirty fellow dairymen who are co-operating to employ a man who gives all of his time to obtaining and posting the records of milk production, test of the milk, amount and value of butterfat the amount and value of the feed consumed and the profit and loss for each cow in the cow testing association in which he is employed.

If you are skeptical as to the value of a cow testing association why just for your own satisfaction weigh and test one day per month the milk from each cow in your herd and post your records in such manner that you can refer to them later, then, if you are honest with yourself, you will admit the value of record work and will either faithfully continue it or will join a cow testing association.

Report of Wellsville Cow-Testing Association for Month of October. As Reported by LeRoy Hillam, Tester.

The Wellsville Cow Testing Association has completed its second month's work. Every day the value of testing

Utah A Leader In Irrigation Work

Wm. Olsen.

It was in Utah, that modern irrigation was first practiced. A few persons still live who remember the first efforts to water a barren desert and make it productive. The world today is giving credit to the Utah pioneers for the work they did in starting modern irrigation.

It is not surprising, then, that Utah people should take a prominent part in the International Irrigation Congress. It was in Utah that the first sessions were held.

Utah was honored, at the Congress held in El Paso, Texas, by electing George Albert Smith of Salt Lake City as president for the coming year. His selection was unanimous. The vice-president for State of Utah is A. R. Heywood of Ogden, Utah. Dr. John

A. Widsote is a member of the new executive committee.

Utah men took a prominent part on the programs. Dr. E. G. Peterson, President of the Utah Agricultural College, spoke of the work that is being done by the Agricultural Colleges. Dr. John A. Widsote, President of the University of Utah, gave a talk on 'What Dry-Farming Has Accomplished.' Dr. F. S. Harris, Director of the Utah Experiment Station, topic was the 'Irrigation of Wheat.' Mrs. J. C. Wheelon, Irrigation Engineer for the Utah-Idaho Sugar Company, won a prize for his article 'The Agricultural Duty of Water.' This paper will be published in the Utah Farmer in the very near future. Other Utah people took part in the discussion and helped to make the congress a success.

The report of the committee on resolutions, read by Chairman William E. Smythe of San Francisco, recommended the sale of ripe timber from forest reserves in order to build reservoirs for storing irrigation waters. A strong recommendation was also made that legislation be enacted looking to a reduction to the land owners in the cost of construction on reclamation projects where such costs are excessive as reported by the board of cost review.

A study of the water resources of the world by an international commission was also strongly urged in the resolutions which were adopted.

Another important resolution was adopted, that a permanent memorial to irrigation be erected in Salt Lake City. This permanent home, not necessarily where all the conventions will be held, is to be in the form of a large building wherein irrigation exhibits can be made and possibly a place where the most modern methods of irrigation can be taught.

A movement has already been started to work out methods of securing this memorial and also the plans and work to be accomplished by it. Such an organization as the International Irrigation Congress backed by the men who are actively engaged in irrigation and given some government support would mean that its influence would be felt for the benefit of western development.

The officers of the Congress can not do all this work alone, they must have the good will and support of the people of this State. We must get behind the movement and help build a memorial that will be a credit to the achievement of modern irrigation and an honor to the men of this state who first started the practice of irrigation.



GEORGE ALBERT SMITH

Salt Lake City, Utah, President of the International Irrigation Congress.

is being demonstrated, and the importance of this work can only be shown by the results which are obtained this month.

We find in many instances that the "pet" cow in the herd is replaced by some other cow of only ordinary appearance, and that in most cases the farmer does not know what each animal is producing without testing them periodically.

This month seven cows which have been making little or no profit for their owners have been sent to the butcher's block. Many of the members of this association are commencing to weed out the poorer individuals from their herds and are adopting
(Continued on page 12)



The Giant Of The Dairy

Grade up with a Jersey Bull! He is half the herd, and the breed determines half the profits. Breed him to your grade cows and bring the herd average near the Jersey average—489 pounds of butter fat per year. Your calves will be beauties. They'll mature quickly into gentle, hardy, vigorous and persistent milkers, long-lived and adapted to any climate. Let us tell you more about them. Send for our book, "The Story of The Jersey." It's free and it's a dandy.

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The American Jersey Cattle Club
327 West 23rd Street - New York City

Duty of Water

I. D. O'Donnell

The term "duty of water" is so often seen in print and heard in discussions relating to irrigation that many people have arrived at the conclusion that irrigation water has a particular and definite duty; that is, each second-foot or each acre-foot of water applied to land should yield certain definite results in the way of crops. There are many terms connected with irrigation that are misunderstood and misconstrued, and none more so than the term "duty of water." The man who most quickly realizes that irrigation water has no definite duty is the man who personally applies it to the land. Under certain fixed and artificial conditions, such as irrigating in tanks indoors, where all conditions, such as irrigating in tanks indoors, where all conditions are carefully regulated and noted, we may, by free use of estimates, arrive at conclusions as to what may be secured by adding a certain amount of water to a certain amount of soil in growing various kinds of crops. These conclusions will not hold good in the big outdoors.

In field irrigation, where there are variations in soil strata, soil texture, topography of land, sun heat, direction and velocity of wind, and more than 57 varieties of other natural controlling factors there are sometimes a little doubt as to just what an acre-foot of water will do in coaxing a crop yield to make itself manifest. When you dispose of all these various natural factors, which up to this time have not been disposed of, you may consider for a time the variations in the skill and care of the irrigators and the disposition—common to all irrigators—to steal water that according to rules and regulations formally announced should be flowing into a neighbor's field.

Admitting that, in years to come, some person with a sufficiently elevated brow may dispose of all the factors above mentioned and implied, there is still the interesting problem of determining just how and how much variations in and between seasons affect the duty of water. Nature has a peculiar inclination to furnish us with a continuous change of style in seasons. No two seasons are just alike or nearly alike, and no cycle of seasons is just like any other cycle of seasons. At times rains help the irrigator, and at times come when not welcome. A dry season following a dry season is more dry than a dry season following a wet season; and a wet season following two wet seasons is more wet than a wet season following two dry seasons.

Averages as to the duty of water may be stated, but averages are misleading so far as they apply to the individual farmer. For example, 2,000 acre-feet of water may be used in a season on 1,000 acres of land, and it is readily understood that the average use of water was 2 acre-feet per acre, and the average duty of 1 acre-foot of water would be to irrigate a half acre of land. To charge for water on this basis would usually be unfair, however, as a part of the 1,000 acres by reason of character of soil could produce a crop with 1 acre-foot of water per acre, and other portions of the 1,000 acres would require from 3 to 15 acre-feet of water per acre.

On my own farm I have found that what I can accomplish in one field with an acre-foot of water I can not accomplish in another field. Every

(Continued on page 15)

To Play Piano Well

One should have the benefit of the best rudimentary instruction in the beginning. This can only be done by selecting the most competent instructor.

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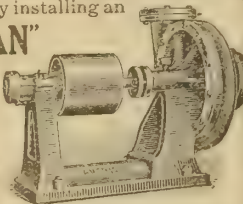
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Report of Tax Committee to The Farm Bureau of Weber County

Your committee on taxation, gave a report as follows:

We have given the matter of taxation, as related to the agricultural interests of the state, much thought, and have carefully gone over all figures which up to the present time, have been able to obtain, and which would throw light upon the subject; the result being that we have come to the conclusion that the agricultural interests are paying more than their just share of the taxes. Upon this fact, find that all the interests of the state are not taxed on the same basis of value. We believe that if the agricultural interests, paying taxes on the same basis as do the mining interests, their taxes would be reduced 1-7 or less of what they are now. In support of this belief, submit the following illustration.

The total assessed valuation of of property in Utah for 1915 was \$228,096,787.00, about 1-3 of this value is agricultural, or \$76,032,262.00. This gives us in round numbers, \$76,000,000 as the amount on which the agricultural intrests paid taxes in 1915. The canal power, and mining companies were valued at \$7,402,918, plus \$8,119,195, as net proceeds of mines, making a total of \$15,522,113, which, deducting the value of the canal and power companies, gives about \$14,000,000 on which the mining interests paid taxes in 1915.

The agricultural products of the state for 1915 were valued at \$47,195,680, which gives us an assessed value of \$1.62 for each \$1.00 of products. The mineral products were valued at \$61,081,633, which gives an assessed value of \$0.23 for each \$1.00 of products, or 1-7 as much taxable value according to the annual products, as the assessed valuation of the agricultural interests, according to its annual products. There were, in 1915, about 42,000 persons engaged in agriculture in the state, which at \$600 per year wages, would amount to \$25,200,000. There was about 11,400 persons engaged in the production of mineral products, which at twice the wage of agricultural workers, or \$11,200 per year, would amount to \$13,380,000. By deducting these amounts for wages from the annual products of these industries respectively, we will get the following remainder.

Annual products of agriculture after paying wages, \$21,995,680. Annual products of mines after paying wages \$47,401,633. These figures give the following comparisons: The agricultural interests pay taxes on \$3.45 of value for each \$1.00 of remaining returns. The mining interest pay taxes on 0.29 of value for each \$1.00 of remaining returns, as do the agriculturists. These figures lack much detail which we are unable to furnish, that if it could be obtained may change the showing as

above given, and we hope all the facts, if obtained, would show less discrimination than seems to exist, as we hate to believe that the farmers are paying 12 times as much taxes, according to their ability to pay, as are the mining interests. But whether the discrimination is more or less than there are figures showing, we believe there is no room for doubt that a discrimination does exist, and that farmers are taxed heavier than many other interests. Now if the fact that many farmers are paying much more than their just share of the taxes concerns the bureau, we would recommend that they appoint a legislative committee, and use their influence to get all other bureaus of the state to do likewise, and that this committee from the whole state, suggest to our next legis-



lature, the needs of the farmers, and of the agricultural interests in general, and to watch all legislation and do their utmost to see that the agricultural interests of the state get a fair

Go The Purebred Bull Law One Better---Get a Good Purebred

W. E. Carroll, Utah Agricultural College.

From now until next spring when beef cattle are turned on the summer range, purebred beef bulls are sure to be in good demand. In addition to the impetus to the cattle business which always comes from a promise of good markets, the purebred bull law, effective January 1, 1917, is exerting a noticeable influence. This law provides that after the date mentioned none but purebred bulls of some recognized beef breed can be turned on the public range or forest reserves, and that one bull must be turned on with each forty head or fraction thereof of breeding females.

The law in itself is a splendid thing, and should mean a great deal to the beef cattle business of the State in

the way of increased profits coming from the better grade of cattle thus produced. From the fundamental laws of heredity upon which this statute is based, we know that animals which have been bred for a certain purpose, toward a certain type, for many generations are more apt to breed true to type, and reproduce their like, than animals of miscellaneous and mixed breeding.

Now, the development of any breed of live-stock consisted in its early history, and still consists, for that matter, of the elimination of the undesirable characters from the animals with which the work is being carried on. The characters which remain are stronger, so to speak, and can be depended upon to appear more regularly in future generations. It is also reasonable to suppose that the easier characters are eliminated first, so that the undesirable ones which remain will be more difficult to get rid of than any which have disappeared in the past. They, too, as well as the good characters, will be more persistent and appear more regularly as more characters are eliminated. If it were only possible to get rid of all undesirable characters, the problem would be easy, but as breeders so will know, both good and bad appear in all animals.

A consideration of the foregoing brief statements should give clearly the key for the selection of bulls to go on the range in compliance with the new State law.

The fact that a bull is a purebred is not enough. If he is made up largely of undesirable characters, he is, as explained above, very apt to transmit with considerable persistence similar characters to his offspring. This means inferior cattle and small profits.

True, the better bulls usually cost somewhat more money, but the difference in most cases is more than made up in the increased value of the offspring. A bull has opportunity of exerting his influence—be it good or bad—upon a large number of calves. A small increase in value per head, therefore, soon makes up a large difference in the purchase price of the sire.

Go the purebred bull law one better. Insist that your bull be not only purebred, but that he be a good one, and don't let someone who has bulls for sale be the judge. Don't buy a bull which doesn't appeal to you. A bull whose good features need pointing out is usually a good bull to leave alone. And finally, don't let \$50, or \$100, stand between you and a good bull. Look to the future, have faith in the future, and the future offspring of a good bull will reward that faith.

DAIRYING

WINTER DAIRY WORK

It is not quite as easy to keep milk and milk utensils up to the mark in cold weather as it is in warmer weather. Cows cannot be kept in the stable day after day and not get their bodies more or less soiled by the bedding they have and the dust from the floors and walls about them. More or less of this dust and litter will certainly work into the milk pails, if we are not particularly careful about grooming the cows regularly.

This is somewhat of a chore, especially if we have a large dairy; but as a rule it may be done when other work does not press. In most dairies the cows are let out to water some time in the forenoon. I have found that this is a good time to clean up the stables; then when the cows come in for their mid-day meal I go over them with a common curry comb and brush.

Then if later in the day they seem to be soiled by lying down, they may be brushed again, this time with a piece of cloth, especially about the flanks, the udder and the lower part of the body. It is a matter of pride with us to have our milk absolutely without smell or taste of the stable.

Now and then we have had a chance to smell and taste milk from other dairies, and often there are unmistake-

able evidence that the milking was not done with proper care. A filthy glass of milk is a shame and a disgrace to the man who sends it to the table. It is also dangerous to health. I never was sicker in my life than I was once when traveling in the state of Ohio. At a hotel I had a glass of milk for supper. I went to bed and fell asleep, but waked up a little later deathly sick at my stomach and with a bowel trouble that nearly took my life. Since then I never have felt safe to take milk in a strange place. Farmers may do a great deal toward keeping up the good health of the people of the cities and towns who use their milk.

Another big study in winter is that of feeding cows. Upon that must depend in large measure the success we attain. One reason why so many farmers do a losing business in winter is that they have not mastered the art of feeding. We have to think of each cow by herself. It will not do to throw in hay, ensilage and grain promiscuously, then, too, we must make a difference between cows that are giving milk and those that are dry. Feeding must be done, also, with some degree of regularity. Cows do know the difference in these things. Some feed twice a day, some three. It has always been my rule to give three rations a day.

The cow that is in milk needs all the good feed she will clean up well, and there must be some variety about it. For an all-round day's feeding there ought to be some hay, some corn in one form or another and some grain with a sprinkling of vegetables or fruit in the line of apples if we have them to spare. It would be better if we were to save some of our cider apples for the cattle than to make so much hard cider to be drunken to the detriment of the body.

The care of the bull in winter is another part of the dairy farm work that needs attention. The main thing is to keep him vigorous. Bulls that are weak and flabby rarely get good, bright, lively stock. If he can be made to do something every day that helps. His rations may be about like those of the cows, regularly given, plenty of it and varied to suit the weather and the season. Hay, ensilage, wheat bran, a bit of oil meal, some fruit and vegetables if possible will keep him in trim. He, too, should be groomed every day.

A GOOD DAIRY HOUSE

H. A. Ruehe.

"Most dairymen realize that in order to produce milk or cream of the best quality it is desirable to have a dairy house so constructed and equipped that the products may be cared for in the most convenient and satisfactory manner.

"It is impossible to draw a plan of a dairy house that will meet the requirements of every individual case. However, there are a few general principles that should be followed in the building of any dairy house.

"Location—Although the dairy house should be near enough to the barn to be convenient, it should not be directly connected with the barn because it is then likely to be filled with stable odors which are absorbed by the milk or cream. It is well to leave an open air space of six to ten feet between the barn and the dairy house. Placing

the dairy house on the side of the barn opposite the barnyard also lessens the chance of stable odors being absorbed by the milk. Proper drainage from the dairy house is important and must be considered when selecting the location.

"Construction—The building material may be drop siding, brick, or concrete, depending upon the investment the builder desires to make. The inside walls should be smooth. Plastered walls are preferable since board walls have a tendency to rot especially close to the floor. Rotting can be obviated to a certain extent by plastering the walls up to a height of about three feet.

The building should be so partitioned that the milk room, wash room, and boiler room are separate. The rooms should be well lighted by windows, and ventilation should be supplied by an opening placed in the ceiling of the room. Each ventilator should be fitted with some sort of damper to regulate its action.

A solid and impervious floor is essential. A cement floor meets these requirements very well. A wooden floor is not very satisfactory because it is not durable, does not dry quickly, collects filth, and when wet is slippery and hard to walk on; the floors should have a good slope leading to drains fitted with proper traps.

Water Supply—An abundance of clean, cold, running water is necessary. If the location is such that water from a municipal water system cannot be supplied, it may be obtained from an elevated tank or by means of a compressed air system.

Equipment—The dairy house equipment depends upon the purpose for which the house is to be used. A boiler is the most convenient means of furnishing steam and hot water for washing and sterilizing cans and utensils. An upright boiler of two to four horse-power will serve the purpose.

The wash room should contain a sink having a drain board. The drain board may be fitted with steam and water connections so that the cans and pails can be rinsed and steamed after they are washed. It is desirable to have draining racks for cans and pails, and a closet in which to keep utensils. Every dairy house should have a Babcock milk testing outfit, which may be either hand or steam driven. Further equipment will depend upon which of the following purposes the dairy house is to serve, namely: (1) selling whole milk in bulk; (2) making butter or selling cream; and (3) bottling milk on the farm.

The making of a good dairy cow begins before the calf is born and continues throughout its entire existence.

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The deposits of this bank amount to more than \$7,000,000.

The Increase during the past three months alone has been over \$700,000.

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1913.....	3,800,000
1914.....	4,500,000
1915.....	5,300,000
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A thrifty farmer is known by the care he takes
of his machinery when it is not in use.

Nothing keeps the mind so bright, the heart so
open, and the home so tidy as hospitality.

A boy who is true to his mother will nearly
always be true to his wife—yes—to his friends
also.

A smile—does not cost a cent but it pays in
dollars—the more you give the more you have.

Owning and caring for a good automobile is
a fine lesson to the farmer in the proper care of
farm machinery.

When some fellow wants to sell you a "get-rich-
quick" proposition, something big—why—sleep
on it one night.

We are apt to feel thankful for our difficulties
after we have climbed to the top of them, and en-
joyed the exhilaration of the summits thus at-
tained.

Waste on the farm—It should be cut to the
minimum.

Feed all the cow will respond to in milk pro-
duction. When she begins to put on flesh, cut
down the grain.

If you have cold feet—"get a move on you."

Keeping any machine well oiled and in proper
repair not only increases efficiency, but decreases
the amount of power required to run the machine.

Silage has been found a palatable, succulent
and economical roughage for use during the win-
ter and summer. It goes with alfalfa hay and
makes an excellent ration. The man who owns
a silo is the best booster for them.

A farmer declined an engagement because he
said he had to spend the day in depositing money
in the bank. When found that day he was using
his manure-spreader on his field. His excuse,
although misleading, was undoubtedly true. Tak-
ing everything off and putting nothing on the
land will destroy its value as surely as always
drawing and never depositing will close out a
bank account in time.

PLAN FOR THE TORREN SYSTEM

According to some of our best posted men who
have made a study of land titles the Torren sys-
tem should be adopted in our state.

Large sums of money are wasted each year un-
der our present system of recording titles, much
of which could be saved with a better and more
sensible system of keeping our records.

The Torren system is not a new one for its
worth has been tested out in other states of our
union and countries such as Australia and
Canada.

The Utah Farmer is working to reduce the
cost of running our state government, where it
will not interfere with its efficiency. The trouble
with all these expenses they finally fall upon the
man who is least able to pay them.

Right now is the time to start a movement for
the Torren system in our state.

RECLAIMING WASTE LAND

If the increase in price of farm products of
all kind continues anywhere near what it is now,
more attention should be given to reclaiming
waste land.

The statement was made in these columns a
short time ago that one-quarter million acres of
water-logged land could be reclaimed by drainage.
What would it mean to our production in this
state if we could make this land productive?

The draining of land is only one way of re-
claiming waste land. Hundred and thousands
of acres are "waste land" because of the lack of
cultivation and proper care.

Some of our land would produce more if it
were given a few loads of manure per acre. Land
becomes no better than "waste land" when we
continually take off crops and never put any-
thing back into the soil.

There are many reasons why we should re-
claim the waste land and now—this year is the
time to do it, so you can take advantage of the
good prices now obtainable for farm products.

DON'T BUY A SCRUB BULL

Many bulls will soon be purchased in this
state in order to comply with the pure-bred bull
law which goes into effect January 1, 1917. The
Agricultural College has sent out the warning,
and we want to emphasize it, to buy only good
bulls.

There are some pure-bred bulls that technically
would comply with the law, but are "scrub bull"
just the same. Dealers are taking advantage
of this new law and bring in many bulls, some

of which are not worth any more or as much
as so much beef would bring.

We have no desire to class all dealers in the
same class, but usually these men do not go to
all this trouble for nothing. They want to make
too much profit on each animal.

Some of the farmers organizations are getting
together and will send an expert with one of
their own members to buy bulls. They should
in this way get better quality and at a lower
cost.

Better quality of bulls will cost more, they are
worth more. Don't let a few dollars stand be-
tween you and a good bull. Above all don't
buy a scrub even if he has a pure-bred pedigree.

STICK TO ONE BREED

One would think that many of our live-stock
men want to be fashionable and change with
each wave of popularity that is given to any
certain bred. When this or that bred is in
favor, they use a sire accordingly and as a re-
sult have traces of two or even three kinds in
their herd. This is just as true of hogs as it is
of cattle.

If there is any one lesson we as farmers should
learn in order to improve our live-stock it is
"Stick to one breed." What the breed of
cattle will be will depend upon whether we are
in the dairy business or whether we are raising
beef. By all means we should decide upon a
breed adapted to the purpose for which we want
it and stick to it. The man who does that is
sure to win in the long run, and the man who
does not do it may be reasonably sure that he
will never accomplish much as a constructive
live-stock breeder.

SAVE SOME MONEY NOW

No matter how prosperous one may be he
shows poor judgment unless he saves part of
his earnings. Practice thrift along with prosper-
ity.

Our crops may not be quite so large, but the
prices are higher this year. Farmers are in
better condition financially than for a long time.

These conditions mean that we should save
some money. Pay off our debts and get out of
bondage. Bank some money and get your busi-
ness on a cash basis. Bank some money against
a rainy day—this is sure to come to all of us.

Buy some live-stock, better farm equipment—
that will help to increase your earning capacity.
The saving that will come from buying for cash
will be a big help toward profit making on the
farm. Aside from the great saving thus effected,
the very fact that a man has money in the bank
makes him a more up-standing, self-respecting
citizen. If you doubt this statement, try it.

What makes the great countries of the world
is a desire of the people to save. People must
be thrifty. Much of the misery of this world is
traceable to somebody's lack of thrift. Future
prosperity comes only when some one is willing
to give up present pleasures. If we have not
already done so, let us now learn the benefits of
thrift. Lets save some money.

"Babies are the raw material of civilization,
the plastic clay to be wrought, partly at least,
by our hands into what form we will. If we
decide that we have no responsibility for shap-
ing and molding this clay we show ourselves to
be outside the present trend of scientific
thought."

FLASHING BEAUTY of RANGES

But it is more than beautiful. It is the perfect baker and the big fuel-saver, and **STAYS** so for a lifetime!

No stove putty to crumble and let in false drafts which cause fuel waste, and spoil baking ability. The Arcadian lasts a lifetime because it is built of malleable and charcoal iron; NOT bolted together, but RIVETED together, metal to metal, everlastingly air-tight, like a locomotive boiler.

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men, because they
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Co.**

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Send your name
for our catalogue,
now ready.



The
Celebrated
Mueller
Saddle

The last job on the place to give the man too sick for ordinary work is the milking. The reasons for this need no elaboration.

Live Stock

HOG CHOLERA PREVENTION

The Bureau of animal industry of the U. S. Department of Agriculture have sent out the following timely suggestions. There is a branch office of this department in the Federal Building at Salt Lake City. Farmers themselves can do much toward preventing the spread of hog cholera and placing swine raising and feeding on a safe and more profitable basis.

To keep hog cholera from reaching your herd, locate your hog lots and pastures away from streams and public highways, and do not allow your hogs to run on free range or highways nor to have access to canals or irrigation ditches.

Do not visit your neighbor's farm nor allow him to visit you if he has hog cholera on his premises.

Do not drive into hog lots after driving on public highways.

Do not use hog lots for yarding wagons and farm implements.

Do not place newly purchased stock, stock procured or borrowed for breeding purposes, or stock exhibited at county fairs immediately with your herd. Keep such stock quarantined in separate pens for at least two weeks, and use care in feeding and attending stock to prevent carrying infection from these to other pens.

Burn to ashes or cover with quicklime and bury under 4 feet of earth all dead animals and the viscera removed from animals at butchering time, because they attract buzzards, dogs, etc., which are liable to carry hog cholera infection.

If hog cholera appears in the neighborhood confine your dog and encourage your neighbor to do the same.

Mange, lice, and worms lower the vitality of hogs, rendering them more susceptible to disease.

If Hog Cholera Appears in Your Herd Have all hogs treated immediately with antihog-cholera serum, after which they should be kept on a light diet with pure drinking water, and confined to limited quarters that should be cleaned and sprayed 2 times a week with "1 part of compound cresol solution to 30 parts of water," until the disease has abated in the herd.

To obtain the best results the serum must be administered as soon as the disease is detected in the herd. Be sure that the temperature of all hogs is taken. A temperature above 104 degrees F. in ordinary weather and when the animal is not excited indicates infection, and such hogs require an increased dose of serum.

To Rid Premises of Infection Remove all manure and mix it thoroughly with quicklime.

Burn all litter, rubbish, and old hog troughs.

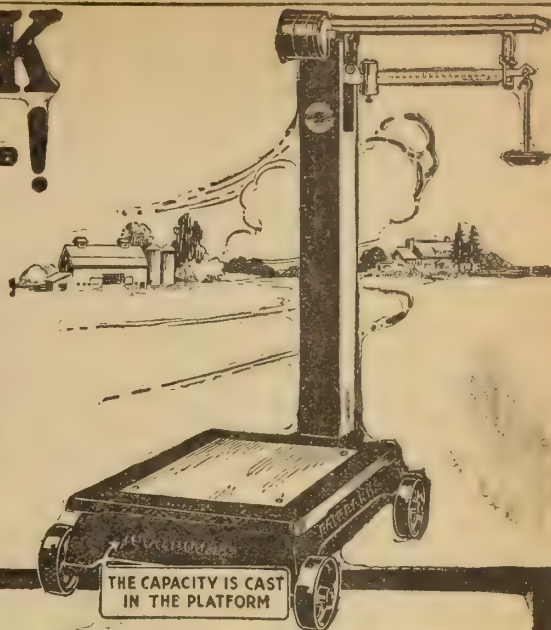
After the premises are thoroughly cleaned, spray walls, floors and other surfaces, including remaining hog troughs, etc., with a disinfectant (1 part compound cresol solution to 30 parts water). Where hog houses are small, turn them over, exposing interior to sunlight. Clean premises, properly exposed to sunlight, will not retain infection any great length of time.

Wallow holes and cesspools should be filled in, drained, or fenced off.

All runs underneath buildings

THINK OF IT-!

YOUR grandfather knew the name "FAIRBANKS" stood for all that was best in scales. No farm should be without this "watch dog of weights."



THE CAPACITY IS CAST IN THE PLATFORM

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"If it's weighed on a FAIRBANKS there's no argument" —

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If You Own a Cow

"How can I get more and richer milk from my cows?"

Proper feeding is the answer. True, you give your cows plenty of hay. But you should also feed a well balanced food compound such as—



which has been scientifically mixed for the purpose of increasing the flow of milk, improving the quality of the milk, and adding to the health and contentment of your cows. It is really a big saving in dollars and cents to use this highly nutritious feed, when you consider the returns of "Sunripe" feeding.

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Ogden, Utah

should be cleaned and disinfected and then boarded up to keep hogs out.

Destroy hogs that do not fully recover, as they may be carriers of cholera infection.

REDUCE FEEDING COST

The average farmer can save a large part of his feed bill each fall if he uses his fields for pasture after the crops have been removed, according to Dr. W. E. Carroll, professor of Animal Husbandry at the Utah Agricultural College. The fields should be properly fenced so as to avoid the necessity of herding the animals. The dairy cattle should be turned on the field first, then the beef cattle should be pastured. The fields, under average conditions, will last the beef animals until Christmas or after. The dairy cows should have access to hay while pasturing. This insures them plenty of food, and there is no danger of a decrease in the flow of milk. Hay fields afford good pasture, and something may be gleaned from wheat and potato fields.

CLEAN UP YOUR GARDEN

If the weeds have flourished in your garden or in parts of it, mow them down, now. If they have not gone to seed, they can be plowed under later to help out the stable manure you apply, but if they have, they should be removed from the garden and thrown on the compost heap; composting kills weed seed.

Weeds are expensive things to have in gardens or anywhere else; they rob garden crops of food and moisture many of them are natural food for all kinds of insects, which when they have devoured the choice parts of weeds attack adjacent garden crops. Weeds may also support plant diseases that would otherwise die and they induce mildews and rusts by reducing air and sunlight around the garden plants. These weeds are now going to seed, and winter winds will jar that seed out, and the chances for a heavy stand of weeds next spring will be quite good.

Other good things to remove now and as the later crops mature, are the crop remnants, especially if there has been disease or insect infestation. Dead stalks are wintering-over places for diseases and insects.

WHICH IS BETTER, THE HORSE OR TRACTOR?

"The final test in buying a tractor, of course, is, 'Will horses or a tractor do my work best?' Here are the chief advantages of each in the light of the best experience on both sides.

"This is a list of points in favor of horses:

"They have stood the test for centuries of useful service.

"Their feed can be grown on the farm, and they help raise it.

"They are self-producing and give about twenty years of service.

"Their manure is a valuable farm product.

"They are intelligent and in some work may be directed simply by word without need of rein, thus saving the services and expense of one man.

"They can go through water, mud, timber, and over rough and hilly

places with comparative ease.

"Though normally developing less than one horsepower, a horse can in an emergency, and for a short time, exert three or four horsepower.

"Here are some points in favor of tractors: Tractors satisfy the demand for power to pull heavy machinery such as large gang plows, corn pickers, and road machinery. This work is too hard for horses.

"Tractors can do belt work such as running ensilage cutters, grinding mills, and other high-speed machinery. This work cannot very well be done by horses.

"Tractors need not be rested in hot weathers, and are not 'soft' in the spring when they are needed most.

"Tractors are not affected by flies, bees, and sickness which may entirely upset and delay a season's work.

"Tractors require no fenced pasture land, nor expensive barns, nor harness. They need but a simple shed for storage.

"Tractors require no care, and likewise cause no expense for upkeep when idle.

"Tractors enable the hay, grain, and other crops to be fed to cattle, sheep, and swine, thus increasing the profits of the farm.

"Tractors cost less than \$100 per horsepower, whereas good horses average about \$150 per horsepower."—Farm and Fireside.



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DUCK-BACK Shoe Oil

makes shoes waterproof and keeps all deleterious substances from getting into the pores of the leather to destroy it. Buy a can of Duck-Back Shoe Oil today.

Utah Oil Refining Co.

Refiners

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Send for Butter Wrappers today.

Farmers, Ranchers, Stockmen

NOW IS THE TIME TO REPAIR THE OLD FENCES AND BUILD NEW ONES.

Do it the new way, the cost is but a fraction of the old, and you will not have it to do again annually. Stretch the wire and apply—

THE UNIVERSAL FENCE STAY

"The Fencer's Friend"

"Wires Cannot Spread"

"Stays Cannot Slip"



No. 1 Stock Proof Cattle Fence No. 2 Cattle, Sheep and Hog Combination Fence with Stays

It is simple, durable, and economical, prevents wires spreading, stock from straying, grounds lightening, displaces the wooden dancer, reduces the number of posts, keeps line wires from falling, eliminates tools and time, applied in seconds, and lives as long as the fence.

The cost of the wooden stay as estimated by reliable men, counting time, labor, and materials, is 5c as the lowest, with the consolation of repeating and repairing them annually. This stay is past the experimental stage. We show it to you before you buy and deliver it to you before you pay.

The ranch with good fences will attract buyers and investors, while, he with a poor one will stop them at the gate.

Used by Railroads, Stockmen and Ranchers—Highly commended at Utah State Fair. All quotations F. O. B. Salt Lake.

Ask us about Chicago Steel Posts, Hog, Sheep, and Cattle Fencing, will be glad to tell you.

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SHEET MUSIC

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DAYNES-BEEBE MUSIC CO., Salt Lake

Fine Weather For Fall Wheat

Farmers should take advantage of the weather conditions now prevailing to plant their fall wheat. The proper time to plant the wheat is between the storms when the seed will be most sure to germinate. Last year because of the prevailing dry weather the fall there was a low germination of all fall wheat.

Before planting the wheat it should be treated for smut. According to Dr. S. Harris, Director of the Utah Experiment Station, the treatment to be recommended for the cover smut of wheat is as follows: Place one pint of formalin containing 40 per cent formaldehyde into 40 to 50 gallons of water. Immerse the seed in burlap sacks, holding about one-half bushel to the sack, in this solution for ten minutes, then remove it and allow it to drain. Let the wet grain remain in a pile, covered with a sack or similar material for a number of hours, then spread it out and allow it to dry as rapidly as possible. As soon as dry it is ready to plant. There are a number of treatments that are good but the formalin treatment seems to be most successful.

In order to secure a good crop it is very essential that wheat be planted that will germinate. Wheat is not as often low in germinating power as other small crops but it will usually pay to make a test. Before planting, the seed should always be run through the fanning mill to remove dirt, weed seed, and broken and small kernels. It should always be treated for smut according to direction already given.

It would pay each farmer to improve his seed by selecting the head of a number of desirable plants and planting them in a special seed garden to furnish seed later for the entire farm. If this were continued every year it would result in much better strains of grain.

The seed should be planted to a depth of about three inches; 3 to 4 pecks of seed should be allowed to the acre on the dry farm while on the irrigated farm one to two bushels of seed should be used.

USE THESE RULES IN DRAGGING ROADS Dry Road Should Never be Dragged— Constant Attention Necessary.

- Use a light drag.
- Haul it over the road at an angle so that a small amount of earth is pushed to the center of the road.
- Drive the team at a walk.
- Ride on the drag; do not walk.
- Begin at one side of the road, returning up the opposite side.
- Drag the road as soon after every rain as possible, but not when the mud is in such a condition as to stick to the drag.
- Do not drag a dry road.

EDISON

Phonographs and Records. Mention this magazine and ask for complete EDISON catalogs, prices and terms. Mailed FREE and POSTPAID

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TRADE MARK
Thomas A. Edison

Dairy
Land

Richland Acres
TILE DRAINED
"THE HEART OF CACHE VALLEY"

Beet
Land

In Buying Land You Should Consider Its Location and The Quality of Its Soil

RICHLAND ACRES is a farm subdivision of 3000 acres situated on the floor of Cache Valley three to five miles from Logan, Utah.

It is served by

- The Utah Agricultural College and public schools.
- The Oregon Short Line Railroad—Two beet stations.
- The Amalgamated Sugar Company—Logan plant one mile distant.
- The Borden Condensed Milk Co.—Wagons pass through the area.
- Mountain States Telephone and Telegraph Co.
- Utah Power and Light Co.—Power and light service.
- Rural Free Delivery.

RICHLAND ACRES HAS

- Tile drained, silt loam soil one to five feet deep.
- Every element requisite for plant food, according to actual analyses.
- Land adapted for sugar beets, alfalfa and garden truck in particular.
- Reclaimed swamp lands of unexcelled fertility for celery culture.
- Unsurpassed primary water rights and excellent flowing wells of purest water.

RICHLAND ACRES IS BEING SOLD ON EASY TERMS AT \$100.00 TO \$200.00 PER ACRE—ONE FOURTH CASH—THE BALANCE IN TEN ANNUAL INSTALLMENTS, BEARING 6% ON DEFERRED PAYMENTS.

Logan Land and Drainage Company

A. F. CARDON, Manager.

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LOGAN LAND AND DRAINAGE CO.
Logan, Utah.

Please send me illustrated book on RICH-
LAND ACRES.

Name

Address

I am interested in beet land
dairy land

Drag whenever possible at all seasons of the year.

The width of traveled way to be maintained by the drag should be from 18 to 20 feet; first drag a little more than the width of a single wheel track then gradually increase until desired width is obtained.

Always drag a little earth towards the center of the road until it is raised from 10 to 12 inches above the edges of the traveled way.

If the drag cuts too much, shorten the hitch.

The amount of earth that the drag will carry along can be very considerably controlled by the driver, according as he stands near the cutting end or away from it.

When the roads are first dragged after a very muddy spell the wagons should drive, if possible, to one side until the roadway has a chance to freeze or partially to dry out.

The best results from dragging are obtained only by repeated application.

Remember that constant attention

Make Money Sawing Lumber

Every farmer who has a woodlot can make money in his spare time sawing lumber with an "American" Portable Saw Mill. If he has no woodlot, he can do "custom-sawing" for his neighbors at big prices. An "American" mill will saw 2500 feet a day with 8 H.P. farm engine. Profits mount fast. "American" Mills are designed especially for farm use. Easy to move and anyone can operate. Famous for quality for years. Get an "American" and start to make money.

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With cold winter days so near, the thoughts of dainty, tasty jellies and delicious jams made right at home are natural. They are cheaper than substitutes—and, oh, so much better. The West's grapes and apples are now available. Utilize them this year—you'll have success by using

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HOME

BREAD MAKING
Gail Richie.

Different varieties of wheat, when ground, yield flours having different qualities. There is in wheat a substance called gluten. It is that elastic substance we get when we chew wheat. It is because wheat has this gluten in it that we can use it to make light or raised bread. Hard wheat has a very elastic gluten in it, while soft wheat has a gluten not quite so elastic.

Spring wheat makes hard flour. Winter wheat makes soft flour. The spring wheat yields a flour that has a granular feel, has a larger proportion of gluten, will absorb more water, and is known as a "strong, hard wheat flour." The grains of the winter wheat are larger, softer, the flour has a powdery feel, a smaller percentage of gluten and a larger percentage of starch, and is known as a "soft flour." The woman who handles flour soon learns to distinguish the difference in feel. She should also know that the granular one will take up more water, or in other words, the spring wheat flour will require less flour to a given quantity of liquid than a winter wheat flour. Then if soft and hard wheat are the same price per sack, it is cheaper to buy hard wheat for bread because it will make more.

Color of flour is another way of telling the hard from the soft. New spring wheat flour is more creamy in color than winter wheat flour. A dull gray flour does not indicate a good flour for bread making. Whiteness is not necessarily a mark of excellence in quality of bread. Sometimes it indicates the use of bleaching agents.

Graham Flour is made by grinding the whole grain. Just after its introduction, Graham bread was widely used, because it was thought to contain more nourishment than white bread. But while it may show a higher amount of nutrients by chemical analysis, the additional fats and proteins are so mixed with the indigestible, woody material that they cannot be used in the digestive system and its actual food value is now known to be lower than that of white bread, and it is used for variety or because of its laxative qualities. Its laxative action is probably due in part to the mechanical irritation of the intestinal wall by the bran particles and also to the stimulating effect of the mineral salts in the bran. The cheaper grades of Graham flour are sometimes made by mixing an inferior grade of flour with bran.

Entire wheat flour is not made by grinding the whole wheat grain, as the name might indicate; part of the bran coats are removed. It is usually more finely ground than Graham flour.

Liquid

A choice may be made,—water and milk, milk and water, potato water, or buttermilk. In using milk, buttermilk, or potato water, some nutrient is added to the bread. Milk bread has a flavor and texture a little different from water bread. Milk should be scalded and cooled before using in bread making. The microorganisms that cause sourness in milk are thus heated until they all die. Only pure water or milk should be used. In adding potato-water we are adding starch, the kind upon which yeasts grow best. Some have the idea



—"woman's work is never done"

Especially on the farm. Busy from morn till night—cooking, churning, feeding the chickens, getting the youngsters off to school, washing dishes and a thousand and one odd jobs.

When the day is done and the lights are lit, out comes the darning basket. It isn't fair to mother. Let the whole family wear

DURABLE DURHAM HOSIERY FOR MEN, WOMEN AND CHILDREN

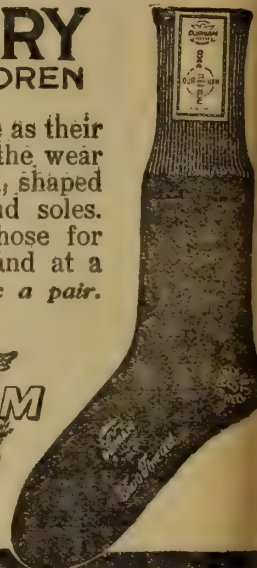
and darning will be a thing of the past. Durable as their name, this famous hosiery wears best where the wear comes hardest. Made of sturdy, stretchy yarn, shaped to fit, with extra strength at heels, toes and soles. Different weights for different purposes—a hose for every use, for every member of the family and at a price you'll be glad to pay. 10c, 15c and 25c a pair.

Ask your dealer for Durable Durham Hosiery. He ought to have it in stock, as we are the leading makers of low-priced hosiery in the world. Have him show you the 25c mercerized hose. Don't forget the name—Durable Durham.



DURHAM HOSIERY MILLS

Durham, N. C.



For Greatest Satisfaction Use
**DOUBLE SERVICE
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Absolutely Punctureproof

Double Service Tires are made double the thickness of the best standard make tires.

This 100% greater wearing surface naturally gives that much more mileage and service. The average of 12 miles of tough fabric and one inch surface tread rubber makes these tires absolutely punctureproof.

These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are easy riding and resilient as any other pneumatic tire—the air space and pressure being the same.

They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use in the U. S. government and European War service.

Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer:

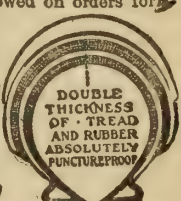
PRICES

Tires Tubes		Tires Tubes	
30x8 in.	\$8.60 \$2.30	32x4 in.	\$17.45 \$4.55
30x3 1/2 in.	10.95 3.10	35x1 1/2 in.	21.20 5.00
32x3 1/2 in.	12.75 3.20	36x2 in.	22.50 5.75
33x4 in.	15.75 4.20	37x4 1/2 in.	23.60 6.20
34x4 in.	16.70 4.35	37x5 in.	26.30 6.60

All other sizes not included in above list also furnished. Non-skids at 10% additional. Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.

Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only.

Descriptive folder upon request. Write for it.
Double Service Tire & Rubber Co., Akron, O. Dept.



When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

Fine Improved Irrigated Farm

for sale in South Eastern Idaho at a

Great Bargain Fully Paid Up Water Right

in one of the best canals in the State. 160 acres all fenced and in cultivation.

REASONABLE TERMS

Long time and low interest above cash payment. Low price for limited time—must be snapped up quick.

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DU PONT

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FARM
POWDER

**The Original and Largest Selling
Farm Explosive**

Why use expensive high speed dynamites when this slower, safer farm powder will save you from \$3 to \$5 per hundred pounds and for most farm uses do better work?

BIG BOOK FREE

As pioneers and leaders in developing farming with explosives our booklet gives the latest, most reliable and best illustrated instructions. Write for **HAND BOOK OF EXPLOSIVES No. 588F.**

DEALERS WANTED

We want live dealers in towns still open. Get the orders resulting from our continuous heavy advertising. You need not carry or handle stock. State jobber's name or bank reference when writing.

E. I. du Pont de Nemours & Company
Established 1802

World's largest makers of farm explosives
Wilmington, Delaware

Are You Using Utah-Idaho Sugar?

Doesn't it measuer up to any sugar you have ever used, in sweetness, purity and whiteness? Haven't you found it better than some sugar you have tried? Let your neighbor know why you are able to make delicious preserves and jellies. Tell her she will get better results in her fruit canning, cooking and baking if she uses Utah-Idaho Sugar.

—Every sack is identical—
sweet, pure, white and evenly granulated. Order a sack today. Be sure to specify—

UTAH-IDAHO SUGAR
ABSOLUTELY PURE

that bread in which potato water is used will keep moist longer than other bread, and while this is true to some extent, the moisture of the bread depends more upon the proportion of flour and liquid used and the care taken in testing the oven and in baking the bread the proper length of time, than it does upon the kind of liquid. Scalding hot milk or water should never be used, for it makes damp, clammy bread that never has a fine texture.

Salt and Sugar:

Salt is added to improve the flavor. Salt in large quantities has antiseptic properties, but such a small quantity as is used in bread does not materially retard the growth of the yeast. Sugar is good yeast food, and hastens the growth of the yeast by being in such condition that the yeast plant can make use of it at once. It also improves the flavor of bread. An excess of sugar affects the tenderness of the crust and crumbs and darkens the color of the crust.

Shortening:

Its use is optional; good bread can be made without it. Lard is said to produce the whiter loaf, and butter to give the better flavor. A small quantity, however, will have little effect.

Recipes:

Long Process Bread, (1 loaf):

½ c. boiling water.

½ c. scalded milk.

½ tbsp. butter or lard.

1 tsp. salt.

1-8 to 1-6 cake compressed yeast mixed to a paste in 2 tbsp. lukewarm water, ¼ cake yeast foam or ½ cup liquid yeast.

3 to 4 cups flour.

2 tps. sugar.

Method:—To the sugar, salt and shortening in a bowl, add the hot liquid. Cool to lukewarm and add the yeast that has been mixed to a paste. Add enough flour to make a batter that can be beaten. Beat thoroughly to mix ingredients and incorporate air. Cover well. Let stand in a warm place until quite light. Usually left over night. Add remainder of flour so dough can be handled, knead until the dough is quite smooth and elastic and bubbles appear beneath the surface. The mass of dough should be worked until it feels smooth and velvety to the touch and does not stick to board or hands. Place in a greased bowl, grease top of dough lightly to prevent forming a crust, cover and let rise in a warm place until it has doubled its bulk. Shape into a loaf, put in a greased pan and let rise again until double in bulk. Bake 45 minutes to one hour in an oven that will brown white paper to a delicate brown in five minutes. If the oven is a little cool the bread can be put in before it doubles its bulk. Some say put the bread in the oven as soon as it begins to rise in the pans.

Should the heat of the oven be uneven—one side hotter than the other—the pan should be turned twice before the end of the first half hour.

No brown crust should be formed until after the first twenty minutes of baking. The brown crust formed on bread is due to the starch of the flour being changed to sugar, and through chemical changes turns brown. Crust is more easily digested than the white interior. Make bread sticks for school lunches and children between meals instead of cake. Zwieback or twice baked bread is healthful. Small pans or long narrow pans are better than short wide ones, as

(Continued on page 14)



START THE DAY SMILING

Let the cozy, ready warmth of the *Perfection Smokeless Oil Heater* help you get up on the right side of the bed.

A touch of a match and it sends forth warmth in a minute. It is light and easy to carry.

No Waste—No Smoke—No Odor

Sold at hardware, furniture and general stores. The Perfection burns Conoco Safety Oil, the handiest and most economical of fuels.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)

Denver
Cheyenne
Pueblo
Boise

PERFECTION
SMOKELESS OIL HEATERS

Salt Lake
City
Albuquerque
Butte



Money to Loan On Farms

LIBERAL TERMS

If you need money for additional improvements to buy livestock or any other purpose let us help you.

Because of our long experience in the land business, we are prepared to give you the best service and portection.

Come and see us or write.

Kimball & Richards

"Land Merchants"

The firm that is known
for the "liberal loan."

56 and 58 Main Street
Salt Lake City, Utah.

High Cost of Pleasure

It is rather exasperating to hear the city papers talk about the high cost of living. Prices are beginning to get up where the farmer can set a little silver lining to the cloud, and then the consumer begins to cry about the high cost of living.

The fact is that the necessities are not so high but that well paid laboring men can live very comfortably. It is not necessities that pinch the consumer nowadays. It is the unnecessary things that take our money. We can live, and live comfortably, if we could only cut off some of the luxuries that we are in the habit of indulging in. It costs too much to dress. It costs too much to be amused. Pleasure is what costs, not the things necessary in our comfort and well being.

It is not my duty to tell people how they should spend their money. Perhaps I need a lesson or two myself, but I can see plainly that everybody could afford to pay prices for food products that would enable farmers to make a profit, if they wished to do so, but of course you can't spend the most of your money for amusement and luxuries, things that could be curtailed in most instances with benefit.

Free Baits For Trappers

\$1.00 Bottle Free

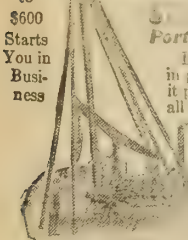
Write today and get yours early, mentioning animals trapped. Don't delay for we have only a few thousand bottles to send Fur Shippers.

Bach Fur Co., Dept. 37 Chicago

STAR DRILLING MACHINES

If you're a man of energy and initiative, you'll find the Star Drilling Machine a most profitable investment. There is a great demand for drilled water wells, and there's a big market for the man with a Star Drilling Machine.

\$200
to
\$600
Starts
You in
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Portable—Steam or Gasoline

Low in price, high in production. You can make it pay for itself and earn dividends all the time. Look into this! Sold on payment plan if desired. Our 110 page catalogue describes 21 different Star Drilling Machines. Write us and we'll mail you this book which will point the way to money making. Write to-day.

Star Drilling Machine Co.
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PIANOS

and Player Pianos—World's Best—Lowest Prices. Catalog FREE if you mention this paper

Daynes-Beebe Music Co. SALT LAKE

WANTED

Hay, Grain, Potatoes,
Alfalfa and Sweet
Clover Seeds.

Write us

Vogeler Seed Co.

Salt Lake City, Utah.

and then have enough for necessities. We Americans are extravagant. We waste our earnings. We are living for today instead of for tomorrow. I have no objection to this, if people want it that way, but I don't like to have the consumer complain every time the cost of production goes up on food products.

There would be no particular complaint if places of amusement advanced, their prices, or if beer or other liquors were advanced, or if ten cents was added to tobacco, etc., but let one more cent be added to the cost of a loaf of bread and the consumer rollers long and loud, and the city press takes the matter up and the farmer is made the "goat." He is getting too much for his wheat, or his pork, or beef, or his beans. Prices must go up so the farmer can afford to compete in the labor market or else some people will go hungry. Then, and then only, probably, will people curtail expenses on the unnecessary things of life.

It is a great economic law that governs these things. This law has not been in force in America because of the abundance of food products, but it has been in force in other parts of the world and it will produce like conditions in this country some day. That day may not be so far in the future as some of our consumers now seem to think. The day will come when the mass of the people will buy food products first, and pleasure, amusement and frivolities last.—Michigan Farmer.

REASONS FOR A COW TESTING ASSOCIATION

(Continued from page 1)

the plan of building up their herds from the best individuals.

The "best by test" is the motto which the majority of Wellsville dairymen are now following. With this idea in mind, Mr. John Handy of Wellsville and Mr. Albert Savage of Hyrum are both contemplating the purchase of pure-bred sires. This will eventually bring up the average production of their cows. Pure-bred sires, testing and record keeping, combined with good feed and care, will soon help to place dairying in Wellsville on a basis to establish it as the best of the dairy centers in Utah.

The average production per cow in the association for the month of October was 21.12 pounds of butterfat. The average production of the cows of the ten poorest herds was 14.95 pounds of butterfat, while that for the cows of the ten best herds was 27.07 pounds of butterfat. This shows the average cow in the ten best herds produced 12.12 pounds of butterfat for the month more than did the average cow in the ten poorest herds. With butterfat at forty cents a pound this is a net profit of \$4.84 per month for the better cows over the poorer ones.

A FARMER'S PLAIN

"Gol darn the hen!" said Farmer Brown,
As he, egg laden, drove to town
His crop to market to devote.
"The pesky things! They git my goat!"
"They loaf all winter on full feed,
Just at the time when eggs we need;
An' in the spring, when prices drop,
They lay an' lay, an' never stop!"
—Judge.

In the successful dairy, kindness to animals, careful attention to cleanliness, and the comforts of the cows are sure to be found.



You'll Take a Justifiable Pride In Your Louden-Equipped Barn

and the gratitude of your cows will take the form of increased milk production, while the whistle and song of the caretaker will be testimony of HIS appreciation. Louden Sanitary Steel Equipment eliminates the drudgery of barn work, and makes the care of the stock a pleasure.

You can't afford to deprive your stock of their rightful comfort, your workmen of their rightful convenience, and yourself of your rightful profits—all for the lack of up-to-date sanitary barn equipment. Prices are within reach of all.

Ask for booklet 2 and 3, or call and see the line at your earliest convenience.

MILLER-CAHOON COMPANY

Murray, Utah

Idaho Falls, Idaho

FARMERS SHOULD KNOW



that the hardest work only emphasizes the durability of

SCOWCROFT'S
"NEVER-RIP" OVERALLS
AND
"MADE-RITE" SHIRTS

They are reinforced where the wear and tear comes and made with plenty of room which insures comfort and durability.

Thousands of FARMERS and LABORERS are continually being added to the list of "NEVER-RIP" and "MADE-RITE" wearers because

THEY GIVE SATISFACTION

Ask your dealer for
SCOWCROFT'S
NEVER-RIP OVERALLS
AND
MADE-RITE SHIRTS

Jno. Scowcroft & Sons Co., Mfgs.

OGDEN, UTAH.

Why Such Great Interest?

Do you know why members of the State Board of Equalization are using money and time belonging to the State of Utah to push their pet measure, the amendment of Article 13 of the State Constitution?

They are not required by LAW to lobby bills through the Legislature or to participate in a campaign at the expense of the taxpayer.

Then there must be OTHER reasons for their activity.

There ARE other reasons, and all of them are not in the amendment; some of them are OUT of the amendment but IN the present Constitution.

Section 11 of the Constitution contains several of the reasons; and you will not find Section 11 in the amendment.

This section of the Constitution permits County Commissioners and County Assessors ELECTED by you to handle LOCAL taxation. According to the men who are so busy in support of the amendment, this is wrong. They believe the State Board of Equalization should handle ALL your taxation; that County Assessors should be APPOINTED by the Board, instead of ELECTED by you; that County Commissioners are not fit to have jurisdiction over local taxes and should, therefore, be subordinate to the State Board in all tax matters; that the members of the State Board should continue to be APPOINTED, not elected; that members of the Board should have LARGER SALARIES; and Section 11 must be repealed before all these things can be accomplished.

These are some of the reasons why the Board is so greatly interested.

The Board protests its anxiety to inform the public. Then ask it to give you the exact language of the official reports in which these changes are recommended. If the Board will not give it to you, WE WILL.

The Board and its friends have already given FOUR different reasons for their great desire to have DIFFERENT rates of taxation on various classes of property. Don't you believe it would have been a good way to "inform the public" if they had put the reasons into the amendment itself? Wouldn't you like to know JUST WHAT YOU ARE VOTING ON?

The Board manifests distress because mines are being taxed on the same basis as other property. It complains that the mines are not paying as much taxes as they would be if they were paying more taxes.

But has the Board told you why it is collecting from you for STATE PURPOSES ALONE \$518,000 MORE this year than last? Where does this extra money go? It is MORE MONEY than triple taxation of mine proceeds would have yielded the State this year; more than twice as much. Why was not that \$518,000 used to reduce taxes on the homes, farms, etc., about which the Board says it is so solicitous? Is part of it to be used for the further "information of the public?"

Do you wish lower taxes on homes, farms and other property? Then don't give OFFICEHOLDERS any MORE money to SPEND, no matter where it comes from; even though it comes from mines.

You don't reform a spendthrift by INCREASING HIS ALLOWANCE. You must CUT IT DOWN.

Don't let them tell you they can't reduce your taxes without raising somebody else, because IT IS NOT TRUE.

Make your public officers, high and low, WORK AT THEIR JOBS, instead of junketing all over the country at your expense; make them discharge their USELESS HELP, who fatten on YOUR MONEY; make them get you a day's WORK for a day's wage when they spend public funds; make them OBEY THE LAW and observe their OATHS OF OFFICE.

You will never get ANYBODY'S taxes REDUCED by giving the officeholders MORE TAXING POWER. This amendment may get THEM more money; it will not SAVE any for you. If they really wished to reduce your taxes, they could have done so long ago. And they haven't done it.



The Constitution is your Safeguard.
DON'T LET THEM TAKE IT AWAY FROM YOU!

VOTE "NO"



UTAH CHAPTER, AMERICAN MINING CONGRESS

BOSTON BUILDING, SALT LAKE CITY, UTAH

"Light as a Feather"

"Talk about light, fluffy, tempting and wholesome"

Jelly Rolls, Cakes, Biscuits, and other good things. My! but

CALUMET BAKING POWDER

certainly beats the band for sure results—for purity, economy and wholesome bakings. Tell your mother to try Calumet Baking Powder on the money-back guarantee."

Received Highest Awards

New Cook Book Free—See Slip in Found Can.



KEEPS THE TOES IN YOUR HARNESS

Keep it strong and good looking with

EUREKA HARNESS OIL

Makes harness last longer and look better.

Dealers everywhere

THE CONTINENTAL OIL CO.
(A Colorado Corporation)



Sixty to seventy-five per cent of the fertilizing elements contained in feed go back to the land in the manure if used on the farm and the manure is used.

BREAD MAKING

(Continued from page 11)

they insure more thorough baking of the bread. Large loaves contain so much moisture that, once the crust has formed, it is difficult for sufficient heat to penetrate to the center. Loaves in single pans have a crust all around and are more likely to have a well-baked crumb. When several loaves are baked together the outside loaves may be dried up before the inside ones are done, or sometimes the bread is removed from the oven when the outside loaves are baked, leaving the others underdone.

Keeping Bread

Place in air to cool. Do not wrap in a cloth until cool.

Brush top of loaf with butter or milk if desired.

When cool place in a tight metal box or earthenware receptacles to keep it from drying out. It should not be kept in a wooden receptacle, as wood absorbs the moisture. Clean the receptacle often. Scald and air it. Crumbs left behind will soon become moldy and cause fresh bread to be ill-smelling and bad tasting.

Hot Bread is about as completely absorbed as stale bread, but takes longer. It is not desirable for children, or people with digestive troubles.

Bread-making is a very interesting process and the person who goes about it systematically and with the idea of determining the reasons for certain methods and the causes of results, will be amply repaid.

A Definition of Good Bread

Bread should have a nutty and sweet odor. There should be no sour taste or smell.

Bread should be of fine, even texture with no large holes in it. When pressed with the finger, it should dent easily, but the dent should spring back to the level surface. If the dent stays in the bread, it is not sufficiently baked. If the bread is so hard you cannot press it easily, too much flour has been used in mixing.

The crust should be uniform in thickness on all sides of the loaf. It should be rather thin and should not be hard.

The bread should be baked in such pans that it will rise easily and be of uniform height in all parts.

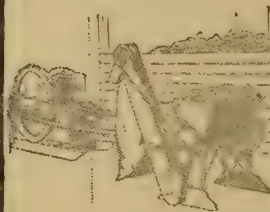
These are the points kept in mind by home economics workers of the College of Agriculture in scoring breads at county fairs and other contests.—University of Nebraska.

HOW TO PRESERVE ADOBE RESIDENCES

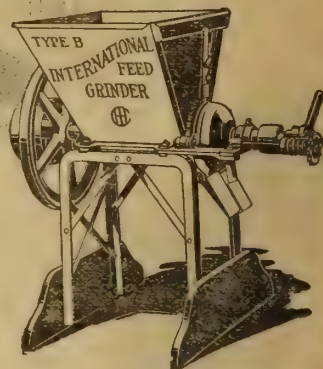
Due to the absorption of moisture by cement plaster and the unequal expansion of cement and adobe and the accumulation of air between cement plastered coats and adobe, cement plastered on adobe walls does not hold. It is readily noticeable that where an adobe house has been plastered with cement plaster and exposed to the weather for a year and sometimes less, the plastered coat has begun to fall off. Instead of plastering the outside with cement a much better and cheaper method is to plaster the wall smooth with adobe mud and when dry put on a good coat of crude oil. After the oil has well soaked into the wall and somewhat dried on surface, which will take from one to three months, give the wall a coat of oil and lead paint of whatever color is desired; the non-fading colors, such as black, gray, and white, are generally to be preferred. Crude oil, such as used in railway engines and which



You Need This Feed Grinder



International Harvester Feed Grinders



IF you are feeding stock, an International feed grinder will soon pay for itself. Whether you are buying ground feed, or feeding whole grain, using your own feed grinder will make a saving for you. In the one case it saves you the miller's profit for grinding, in the other it saves nearly, if not quite, one-fourth of the grain you feed. Besides, it saves all the cob meal, enables you to market steers and hogs in less time, gives you more milk from cows and more work from your horses for the cost of feed they get.

An International is the feed grinder you need, because, with three styles and seven sizes to choose from, all of the highest quality, you can get an International feed grinder of just the right type for your work. Type B grinds corn on the cob and small grain. Type C is for small grain only. Type D is a heavy grinder, used for corn in the husk, Kaffir corn in the head, and other heavy grinding.

Belt your International feed grinder to a kerosene Mogul or Titan engine, and you couldn't have a better or more economical outfit. Let us send you complete information about them. A post card from you will bring it promptly.

International Harvester Company of America

(INCORPORATED)

Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore.
San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah



COYOTES

TRAPPERS—Get "More Money"

for Coyotes, Muskrat, Lynx, Cats, Skunk, Beaver, Foxes, Badger, Mink and other Fur Bearers collected in your section

SHIP YOUR FURS DIRECT TO "SHUBERT" the largest house in the world dealing exclusively in **NORTH AMERICAN RAW FURS** a reliable—responsible—safe Fur House with an unblemished reputation existing for "more than a third of a century," a long successful record of sending Fur Shippers prompt, **SATISFACTORY AND PROFITABLE** returns. Write for "The Shubert Shipper," the only reliable, accurate market report and price list published.

Write for it—**NOW—it's FREE**
A. B. SHUBERT, Inc. 25-27 WEST AUSTIN AVE.
Dept 127 CHICAGO, U.S.A.

cost from four to five cents per gallon, is the kind to use for the first oil coating on the adobe wall. This can be either sprayed on or put on with a large roof paint brush. One gallon will cover from 80 to 100 square feet. Several farmers have used this finish for adobe houses and find that it is excellent. Mr. C. D. Clapp reports that he has used it for inside finish on adobe walls and finds that it is better and cheaper than cement plaster. The oil and paint will not sluff off, the wall will last longer and look even better than when plastered. Try this method and report results.—A. L. Paschall, Farm Advisor for Cochise County.

THE PARTY WIRE

Jack's voice—at the telephone; Hello Dolly! Will you go with me to the baseball game tomorrow?

TAYLOR

WILL PAY YOU MORE

for Furs. Prices high. Trapping season now on. Get busy at once. We furnish traps and supplies at lowest prices.

Write for new booklet, "Opportunities for pleasure and profit in trapping"—also shipping tags, price lists, etc.. **ALL FREE**

SHIP TODAY

F. C. Taylor Fur Co.
115 Fur Exchange Bldg.
St. Louis, Mo.

FURS

Dolly: Wait a minute and repeat Jack. All the neighbors haven't got on the wire yet.

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

Best Herd of Improved Chester White Swine
This Herd Bred, Raised and Sold. The Boar and Sow Grand Champions the World's Fair held at Frisco last year. Both Sire and Dam, still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale all times.

Address

GEO. H. LAWSHE
Idaho Falls City

Lumber cheap direct to you. Pacific Coast Sawmill Co., Portland, Oregon.

When you answer the advertise in this paper tell them you saw in the Utah Farmer. Always buy advertised goods.

FOR SALE

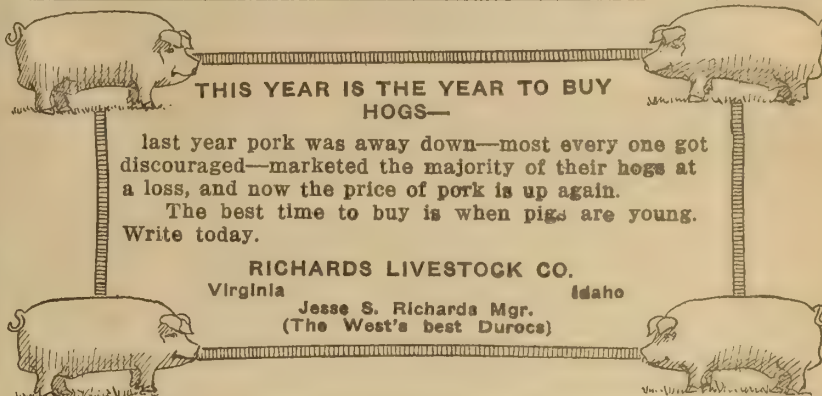
Two registered Clydesdale mares, three and four years old. One team of draft horses; one driving mare. Call Andrew Knudsen, Supt. Utah County Infirmary, Provo, Utah.

UTAH HATCHED WHITE LEGHORN BABY CHICKS \$11.00 PER 100

Circulars, order-blanks, etc., upon request. Candee Colony Brooders carried in stock.

GLENWOOD EGG FARM
R. D. 3 Murray, Utah

An Airdale brood matron will make you \$75.00 to \$100.00 to year. Puppies for sale. **BATES & SONS, Provo,** R. F. D. No. 1, Guhama Farm.



THIS YEAR IS THE YEAR TO BUY HOGS—

last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again. The best time to buy is when pigs are young. Write today.

RICHARDS LIVESTOCK CO.
Virginia Idaho
Jesse S. Richards Mgr.
(The West's best Durocs)

Wanted to hear from owner of good farm for sale. State cash price and description.—D. F. Bush, Minneapolis, Minn.

BUTTER WRAPPERS

We carry a large stock of the Best Vegetable Parchment Butter Wrappers and Especially Prepared Ink for Printing the same. We furnish them Postage Prepaid at the following Prices, money to accompany order.

100	\$.30
200	\$1.25
500	\$2.25
1000	\$3.00

Send all orders to

THE UTAH FARMER
LEHI, UTAH

OPENED JAN. 1ST, 1913



"The HOTEL that's BEST in all the WEST."

WHEN IN LOS ANGELES STOP at the NEW FIREPROOF HOTEL NORTHERN

EUROPEAN
200 OUTSIDE ROOMS
150 WITH BATH
420 W. 2ND ST., NEAR HILL
NORTHERN HOTEL CO., PROP.
(FRANK L. CRAMPTON, MGR.)
CAFE IN CONNECTION
RATES \$1.00 PER DAY AND UP

October Bargains

Our 4-year old Herd Boar — Defender — 4 spring boars, 10 spring gilts.

Spring Lake Stock Farm
Payson, Utah.

Junior Champion Sow at Utah State Fair

IN 1915, WAS PRODUCED BY A BOY UNDER 14 YEARS OF AGE. GIVE YOUR BOY A CHANCE TO PROVE WHAT HE CAN DO.

Duty will not keep the boy on the farm but interest will. Get your sons interested in the farm by encouraging them to purchase a pure bred Berkshire.

We can supply them with excellent individuals of either sex varying in age from 2 months to mature animals for prices ranging from \$12.50 and up.

Associated Ashlane Farms
C. P. WARNICK & SONS
Phone 31R3 Pleasant Grove, Utah

WOLF COYOTES

Will pay you cash, Money Order or Check for immediate shipment at the following High Prices for Skins from your section. We charge no commission:

	Prime Med-	Large lum	Small	No. 2	No. 3	No. 4
Montana, N. Daw., N. Minnesota	\$7.00	\$5.00	\$3.00	\$5. to \$2.50	\$1.50	\$.50
Idaho, Wyo., S. Dak., Minn., N. Nebr.	6.50	4.50	2.50	4. to 2.00	1.00	.35
Nevada, Utah, Colorado, Nebraska	6.00	4.00	2.00	4. to 2.00	1.00	.35
Wash. Ore. N. Cal. Ariz. N. Mex. N. Tex. Olka.	4.00	2.50	1.50	3. to 1.50	.50	.20
So. California, Central Texas	3.00	2.00	1.00	2. to 1.00	.40	.15

Send small shipments by Parcel Post; will refund postage. Large shipments by express which we pay. Send for Price List on other Furs.

STICHT—SINGER FUR CO., Inc.,—Etab. 1905.—329 Seventh Av., New York, Dept C.

References: Brandstreets or Dun's Agencies, any Bank or Bankers

If you have any poultry or live-stock for sale use this page. Do you want to exchange or sell any real estate. We have helped others why not you?

DUTY OF WATER

(Continued from page 2)

irrigator experiences this. The results accomplished by an acre-foot of water vary in different parts of a small field. The Department of Agriculture has been making studies of the duty of water on my farm for a number of years. The reports made by the men assigned to this work show me great variations in the duty of water under what on the surface appear to be similar conditions. I find that where a reasonable amount of water is evenly applied to a field some portions of the field are really overirrigated, and on other portions most of the water immediately passes down beyond the reach of plant roots.

The term "duty of water" should be used less, and some such term as the "duty of irrigators" used more. There

is no variation in the duty of irrigators, which is to use every acre-foot of water to the best advantages.

THE FIRST ICE CREAM

It is just about 100 years since the first ice cream was invented by Sambo Jackson, a negro confectioner in New York.

Custards were Jack's specialty. One hot day he put a tin of custard in a bucket of cracked ice to cool it. Of course, the custard froze. Jackson, tasted it, made some more, liked it, so did his neighbors, so did his customers, and finally he evolved the frozen custard into modern ice cream, selling it in quart tins at a dollar a tin. He died rich—which, considering that he was an inventor, is more wonderful than his invention.

PROHIBITION IS COMING THE DEMOCRATS HAVE BROUGHT IT NO ONE DENIES THIS

Senator Smoot said the Republicans would have to declare for it in 1916 or be defeated.

The Becker Brewing Company of Ogden, The Salt Lake Brewing Company, Joseph Lipman President, The Fisher Brewing Company, The Wagner Brewery, are the chief owners in the Herald-Republican, the personal organ of Senator Smoot. Do you wonder why the Republicans have not given you Prohibition? They dared not. These liquor interests are now working for Nephi L. Morris.

WHY?

The denizens of the underworld in an all night banquet recently held in Salt Lake City, wore Morris buttons. WHY? The Republican Party has made Salt Lake City a wide open town. The same forces are working for Morris.—WHY?

Uncle Jesse Knight has posted \$10,000.00 that Bamberger will fulfill the party obligations.

Every Democrat in Utah has made Simon Bamberger his agent to fulfill the Party's pledges.

VOTE FOR BAMBERGER

and clean house and have an honest
State Government

30.5
UT
19. rem.

UTAH FARMER

THE

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 15

LEHI AND SALT LAKE CITY, UTAH

NOVEMBER 11, 1916

Helping The Dairy Industry

Each year our government is doing more to help the farmer. The men who represent the Federal Government are trying to make this help just as practical as possible.

Dairying in the intermountain states is an important part of our agricultural work. The fact that we are producing more dairy products than we did a few years ago shows the interest that is being taken in dairy problems.

A conference of importance to the dairy industry of the western states was recently held in Salt Lake City, Utah. All the Federal Dairy Division field men in the western states, together with Chief Bawl, S. C. Thompson, and C. F. Doane of the Dairy Division, Dr. D. W. Working of the States Relation Service, and other state and Federal officers who are interested in the dairy industry of the West were in attendance. Many of the problems of the dairymen and the methods of handling these problems were discussed.

The West offers many advantages for dairying, and the conditions are many and varied. Perhaps in no other parts of the United States are there so many different problems to deal with. There are to be found the extremes of heat and cold, of moisture, and of altitude. Dairying is carried on at an altitude of around 8,000 feet and from that on down to 150 feet below sea level, and in places that have practically no rainfall up to 120 inches per annum. These conditions must necessarily multiply the problems to be met and call for extremely careful and intelligent work on the part of the field dairymen. The conference was felt to be very helpful to all concerned, and no doubt will result in a more concerted effort to advance dairying in that territory.

Dairy extension work in the West began in a small way in 1910, and the results were so satisfactory that it has been increased until now 14 men are employed and operations carried on in nine states. The preliminary work indicated that the West offered unusual opportunities for dairying. The large part of the crops grown here is bulky forage, which it does not pay to transport any great distance. It was found more profitable to market it through livestock. In some sections of the West alfalfa hay sold on the market for as low as \$5.00 per ton, while the records of a great many dairy cows that were fed exclusively on alfalfa hay showed that they had returned from \$14 to \$24 per ton for it in dairy products.

The dairy industry here has been stimulated by conducting practical demonstrations in feeding, in management of the dairy herd, and in the manufacture of dairy products. Five

years ago the silo was practically unknown in many sections of the West. At the present time in the nine states in which extension work has been done there are approximately 3,300 silos. This is the result of silo campaigns carried on by the field agents in co-operation with the extension divisions of the agricultural colleges. Several tests were made to demonstrate the value of silage when fed in connection with alfalfa. The results of one of these tests are given in the following table.

Dairymen do not always consider

the indirect profits of certain feeds because they look for immediate results at the milk pail. The figures below indicate that silage plays an important part in keeping up the milk flow which would, without this succulent feed, continue to decrease.

Forty cows from a herd of 71 were selected for this test. These cows had freshened prior to September 1st, and all continued in full flow of milk through September, October and November. These forty cows included all in the herd that did not freshen or go dry during the three months.

	Lbs. Milk	Lbs. Fat
September (Pasture, hay in rack, and grain).....	28,241	929.8
October (Pasture, hay in rack, and grain).....	25,518	843.1
November (Hay and ensilage).....	29,028	925.2
(Note: For October the average of 30 days is given.)		
Decrease, September to October.....	2,723	86.7
Assuming like decrease, October to November.....	2,723	86.7
Total decrease without silage would have been.....	5,446	173.4
November yield with silage was.....	29,028	925.2
Without silage would have been.....	22,795	756.4
Total decrease without silage would have been.....	6,233	168.8
Value of increased butterfat at 27.5c.....		\$46.42
Value of skim milk at 25c per cwt.....		15.58
Total value of increased products.....		\$62.00
Tons ensilage fed per month, 18.		
Increase for each ton fed.....		\$ 3.44
Each ton of ensilage fed replaced		
330 lbs. grain, valued at \$1 per cwt.....		3.30
650 lbs. hay, valued at \$5 per ton.....		1.65
Value of ton of ensilage.....		\$ 8.39



SOME OF THOSE WHO ATTENDED THE DAIRY CONFERENCE

Back Row—W. C. Winder, Prof. John T. Caine III, J. M. Kirkham, H. H. Beier, S. C. Thompson, N. C. Jamison, Chief B. H. Rawl, O. T. Koster, Dr. D. W. Working, J. E. Dorman, L. A. Perce, E. F. Burton, Ben R. Eldredge, W. E. Meyer, Dr. R. J. Evans.
Second Row—LeRoy Hillam, C. M. Matheny, F. M. Hillman, O. E. Gibson, W. A. Barr, Dr. W. E. Carroll, E. F. Rinehart, H. A. Lindgren.
Front Row—F. W. Kehrl, R. W. Latta, L. E. Cline, V. E. Scott, C. F. Doane, H. A. Ireland, E. V. Ellington.

One problem confronting the dairymen in many sections of the West was the poor quality of dairy cows. Due to the increased interest in dairying several thousand cows have been purchased in the Middle States and shipped here to dairymen during the past few years. Many of these cows were culls, and even with cheap feed it was found that some of them did not return a profit. In order to eliminate such cows, a campaign was started to increase interest in keeping herd records. Thirty-two cow-testing associations, with a total of 16,839 cows on test, are now active in this territory. All these associations were organized during the past four years. Dairy cow owners are contributing approximately \$32,000 to carry on this work. Besides cows on record in cow-testing associations, private herd records are being kept now on over 600 farms. As a result of this work many unprofitable cows have been disposed of, and the average production per cow has been materially increased. One member, by weeding out and adding six more cows to his herd, has the following excellent snowing to his credit:

	Average Milk per cow. Lbs.	Average Butterfat Per cow. Lbs.
November	409	18.1
December	316	14.3
January	410	20.0
February	717	33.7
March	889	34.2
April	839	42.2

While the chief activities of the field agents have been along the lines of production, the quality of dairy products has not been overlooked. A special dairy manufacturing man was detailed to assist local creameries to turn out a higher grade product. Practically every creamery in the West has been visited and problems have been taken up with the cheese and buttermakers. Pasturizers have been installed in about eighty creameries, on the advice of this expert, and in every case an improvement in the product has been noted. Scoring contests have been carried on at central points where the buttermakers could be present and see their products scored and criticized. A creamerymen and buttermakers' association has been organized and includes the creameries of seven states. A yearly contest is held in which samples of butter are scored. This has created a great interest in improving quality.

A market milk specialist is also detailed to this territory and works principally with the city boards of health and the dairy inspectors, assisting them with their inspection problems and holding milk contests where the city milk supply is graded accord-

(Continued on page 5)

Fall Orchard Practice

J. C. Whitten.

If proper sanitary measures are taken during the autumn and early winter, much may be done to rid the orchard of diseases, insect enemies and other troubles which will go far towards securing better subsequent crops.

While this is not the season for general orchard pruning, it is the time when the grower should go through the orchard and remove all dead, diseased or broken limbs. Ragged wounds leave openings for various cankers and other diseases to get in. Broken branches should be pruned back with a smooth wound to a living side branch. Dead trees should be removed from the orchard. Branches which have died from canker or other diseases should be pruned out, back to healthy tissue.

All cull apples should be gotten out of the orchard. Those which are suitable may be used for cider, vinegar, or evaporating purposes. Those not suitable for such use may best be fed to hogs pastured in the orchard. Any worthless, decayed apples clinging to the trees should be taken off and refuse fruit not otherwise disposed of, removed. These refuse apples contain insects such as codling moth and usually the germs of disease such as bitter rot, scab, etc. Removing them from the orchard goes a long way toward preventing a spread of these diseases next year. Young trees should have their trunks wrapped to protect from mice, rabbits, and to some degree, from borers. Perhaps the most economical wrapper is the venerable wooden wrapper which is a thin slice of wood of the character of which berry boxes are made. Wrappers 15 inches long, 8 inches wide can be very cheaply secured. They should be fastened loosely around the trunk with a wire attached to the edge of the wrapper. If not thus attached, the wire ring may slip down and eventually girdle the tree. Approximately one inch of space should be allowed between the wrapper and trunk of the tree to give aeration and prevent injury to the bark. Wooden wrappers are perhaps the most economical. A still better wrapper, but more expensive, is screen wire such as is used for window screens. It may be cut into the desired size to accommodate the size of the tree. In small orchards even old newspapers, cardboard, corn stalks or other material available may be used. In addition to keeping out rodents, insects, etc., these wrappers shade the trunks of the trees, prevent absorption of heat, especially on the south side during sunny days and therefore avoid what is called sun scald.

Mice are likely to make nests around the trunks of trees, provided they have loose material at the base of the trees in which to make a nest. If the young orchard is plowed, the loose soil turned up against the base of the trees makes an excellent hiding place for mice. Soil ought to be scraped bare and smooth around the base of the trees so no loose soil, weeds, grass, or litter can collect and enable the mice to nest close to the trunks where they will eat through the growing layer thus girdling the tree. This precaution should be taken whether wrappers are used or not as mice frequently burrow in beneath the wrappers, if the soil is loose, and find shelter behind the wrapper.

Waste On the Farm

Jim Rivers.

Take a look at the wastes that go on on the farms, on your farm and mine. Do we belong to the class of careful farmers or the happy-go-lucky kind? Do we watch the wastes?

The wastes on the farm are more numerous than in any other class of business involving like capital. That is a broad statement, yet nevertheless a true one. It is only because the profits on the farm come more readily than the profits of most businesses that many farmers are able to keep their heads above the tide of debt. This does not mean that all the wastes are big ones, far from it, but the little ones, when multiplied, have a habit of forming an astounding total. Just to enumerate a few of them: There is the waste that occurs from lack of proper care for machinery. Machines and tools are left out in the rains and snows of winter with no protection, not even a coat of paint. A machine shed which will afford protection and save hundreds of dollars is within the means of every farmer in the state. A few poles and some straw will make one which will do the work. It may not look nice, but it stops a leak. That is the point. Then there is the waste of feed and labor which occurs on any farm where diversified farming is not practiced to some extent. This is the waste of the straw where there are no animals to eat it, here the plant food contained in it go up in the smoke of a burning stack. There is the waste of the grain which always occurs in grain fields that are not gleaned by live-stock. No grain field is ever harvested absolutely clean. There are scattered heads where the grain was dislodged, stray talls of wheat or oats along the fence rows and where the binder missed them in turning, shattered grain lying all over the fields where heads were over-ripe when cut. All this grain is wasted unless there is livestock to garner it. Left alone it volunteers and interferes with the next crop, gathered it makes valuable beef, mutton or pork. There is the waste of horse labor on farms where the horses enjoy six months of idleness; the waste which figures in mounting grocery bills on farms where the garden is neglected; the waste which arises from poorly kept and consequently lower priced eggs and cream; the waste of hay, of forage, of pasture. It is not possible to stop all the leaks on the farm at once. They are too many and too varied. But the farmer who looks things in the face, who does not try to dodge the issue, who plans ahead can plug many of them if he cares to. Therein lies the trouble. Many farmers don't care to. "Too much trouble," they say. We make money on our farms, enough that we do not have to sweep the corners in an endeavor to make both ends meet. The little things that are leaks, that take away part of the profit are "too much trouble." We are a wasteful people. We set a tap running and forget about it. The poorest of us have most modern conveniences and use them freely. We don't watch them close enough. Perhaps there is less waste inside than outside the house, probably the man has more wasteful habits than the woman. But each has more than enough. The dividends run through the open spigots of small waste.

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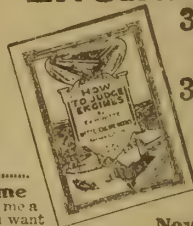
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Place of Rye On the Farm

This grain is useful in many ways. Helps fill gaps in farm crop schedules. There are many excellent reasons for growing rye on the farm, according to specialists of the U. S. Department of Agriculture, even though in most localities it is less profitable as a grain crop than wheat. Rye is hardier and can therefore be grown as a winter grain in cold, exposed places. It will do well on sandy, poor or acid land. It may be sown later than wheat, thus fitting well into the farm schedule, especially when there is a rush of work in the fall. It is attacked by fewer insects and diseases than wheat, produces a more valuable straw, requires less fertilizer, and being earlier is better as a forage crop.

Adaptability of Rye.

Rye can be grown on almost any well-drained soil. One of its advantages is its adaptability. It can be used to fill gaps between other crops. Sown early or late in the fall, on land either rough or well prepared, it can be depended upon to make a good growth in almost every instance, at the same time conserving fertility and preventing washing during the winter. It may be given the same fall and winter treatment whatever use is to be made of it, and the farmer need not decide until spring whether to pasture it, cut and feed it green, plow it under, or harvest it as a straw and grain crop. Like all other grains rye is best grown in rotation.

Soil Requirements.

Although rye will grow on very poor soils, large yields can not be secured from soils not of good fertility. The soil should not be exceedingly rich, however, for grain production, and not much nitrogenous fertilizer should be used. Stable manure is the best fertilizer. Some phosphate should be used also. Seed should be thoroughly cleaned. They also should be tested carefully, as rye loses its germinating power more rapidly than most other cereals. The rate of seeding should depend on the showing from the germination tests. When intended for grain production sowing should be made about September 1 in the northern most parts of the country, and should range from this date to the latter part of November in the extreme South. Rye may be sown from 1 to 2 weeks later than wheat. If the rye is to be used for pasture it should be sown from 2 weeks to a month earlier than when sown for grain crops. On fertile land the fall sowing may be later than on poor land. Spring rye may be sown as early as spring oats or as soon as the soil becomes warm and dry enough to be worked.

Harvesting.

Beginning in northern Florida about the middle of May, rye ripens approximately a day later for each 15 miles to the north generally a few days earlier than wheat. Like wheat, (Continued on page seven.)

Don't Put Things Off

Don't put off till tomorrow what should be done today; do it now. If you see a screw out of a hinge on the barn door, fix it right away, it will never take less work than now; and to put it off may cause the door to break down, and thereby compel you to make another one. If you see a horse limping, stop and investigate the cause immediately; there may be a nail in his foot, and to remove it immediately might prevent a lot of trouble, and save you from losing a valuable animal. If you see a chicken that is droopy, stop and examine it, don't put it off; try to find out the matter, and locate the cause of the trouble, remove the chicken to itself, and do what you can at once to prevent other chickens from getting the disease. To act at once might save a large flock of chickens from getting the cholera, and to act immediately will in the end take less than a third of the time and trouble that it would take if put off. If you see a panel of fence down, don't put off fixing it until half of the fence is on the ground, and the cows have gotten in the corn. If you see a tug that is about broke in two, don't wait until you are hitched to a heavy load and going up a steep hill, and then have it break, fix it before it breaks. If you find a small sore on a horse, do something for it at once, and if possible remove the cause of the sore; don't wait until the horse is laid up, and then have to keep him idle for a month or two, while it heals. If you notice a hog that is not acting just right, stop and look after it, separate it from the others, try to find out what the matter is and prevent the others from taking the same disease; you might save a flock of hogs from getting the cholera. It is much easier to doctor one sick hog than a whole flock. If you see a limb of an apple tree that is too full, either shake some of the apples off or prop the limb, don't wait for it to break. If you find a board lying around with a nail in it, stop and pull the nail out or bend it over, don't wait for somebody to step on it. If you see a piece of barb wire lying around, roll it up and put it away before a horse gets cut up, it will be just as nice to roll it up the way it is, as to wait till it is smeared with blood.

Thousands of dollars are lost every year by the farmers because of putting things off. Many a farmer has lost a valuable horse or cow because he put off fixing the fence that separated the stock from the corn or wheat; and many a farmer has lost a fine flock of hogs because he did not attend to the first hog that took sick. Of course some farmers will tell you that they simply haven't time to do everything just when it ought to be done. And we all know how that is; we know how it is to be nearly worked to death, and then have a number of things come up to demand our im-

(Continued on page fifteen.)

Good Foundations

We often hear people say—good foundations—but how many ever seriously think of how they should be built when considering building of a new structure.

There are really only two requisites for a good foundation: Sufficient width to bear the load and sufficient depth to get below the frost line. All soils do not have the same bearing power. A footing that would hold perfectly on clay might settle and fall on a sandy soil. In swampy ground it often is necessary to drive piling to secure good footing for even a common building.

Nothing is so important as a good foundation in preserving the life of a building. Last winter I saw a barn that was apparently in good repair except that it had settled out of shape badly. The roof line was wavy and distorted. A glance at the foundation proved what easily could be guessed—that the sills had been placed on shallow piers that extended into the ground eight or ten inches. Unequal settling of the piers had wrecked the building terribly and shortened its life.

By experiment it has been found that soils have about the following bearing power per square foot: Dry clay, 8,000 to 12,000 pounds; soft clay, 2,000 to 3,000 pounds, dry sand, 4,000 to 8,000 pounds; quick sand and alluvial material, 1,000 to 2,000 pounds. In deciding how wide a foundation should be, figure the weight of the building and give it enough square feet of foundation to bear the weight.

For example, say the weight of a 10x12 granary is estimated at 8,000 pounds. Add to that 58,200 pounds for 970 bushels of grain. If the weight is borne by two walls twelve feet long, built on ordinary clay soil that has a bearing power of 2,000 pounds to the square foot, the twenty-four feet of foundation will have to be sixteen inches wide to be safe.

I have seen concrete water tanks that when filled would weigh over 100 tons settle and crack because of poor footing. Cracks in masonry silos sometimes attributed to improper reinforcing or poor concrete are more often due to uneven settling of the foundation. All foundations should extend below the frost line, especially those of heavy masonry structures, such as silos and storage tanks. The drier the ground is kept, the better; hence, proper grading and eave troughs on the buildings are always paying investments. When water runs under a footing and freezes, some expansion results, which forces out a little earth. Then when the next thaw occurs the conditions are right for some settling of the building. When this process is repeated many times trouble is sure to result.—Wm. Olson.

How to Propagate Roses

The propagation of roses for one's own use is an essential part of the work of the home rose gardener if he would reduce expenses and add a new interest to rose growing.

The plants are propagated from seed, by hardwood cuttings, softwood cuttings, layers, budding, and grafting. The rose species used as shrubs, such as the Rugosa, Carolina, Prairie, and Wichuraiana, are propagated by root sprouts and the others named by hardwood cuttings. The Wichuraiana is naturally a trailing plant which takes root near any eye. By cutting rooted stems into pieces so that each one has some roots and an eye each one will make a plant.

Some rose species, like *Rosa hugonis*, are difficult to grow from cuttings and are therefore grown by layering; that is, by covering shoots with earth until they are well rooted before cutting them from the plant. The rooted stems of the Wichuraiana might be considered to be natural layers.

Climbing roses are mostly propagated by hardwood cuttings. Cut-flowers roses are grown from hardwood cuttings, greenwood or softwood cuttings, and by budding or grafting.

Hardwood cuttings are taken from the dormant wood of winter, while softwood, or greenwood, cuttings are taken when the plants are in active growth. To make a hardwood cutting, good, strong, wellripened shoots of the past summer's growth should be selected. These are better if cut between the time the leaves fall and freezing weather. If left until after cold weather there is danger of injury from freezing. They should be cut into pieces of 5 or 6 inches, with the upper cut just above a bud, and should be tied in bundles with raffia or with string that does not rot easily if exposed to dampness. After labeling plainly they should be buried in moist sand, tops down, and placed in a cool cellar or buried in the open ground below danger of frost. They should be planted in the open ground in the spring about or a little before corn-planting time, so that one or two eyes, or not over one inch of the cutting, is above the ground, which will leave 4 or 5 inches in the ground. Care must be taken not to injure the calluses that have formed while the cuttings were buried. Sometimes better results are obtained by planting in partial shade.

Frequently cuttings made in winter or early spring do nearly as well as those made in the fall, but in the North there is always danger of the wood being injured during the winter.

Softwood, or greenwood, cuttings are made soon after blooming from wood of the current year's growth. This may be taken from the stems that have grown roses or those that have not. There are claims that it makes a difference which sort of shoot is used, but good, strong shoots are the most (Continued on page eleven)



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DAIRYING

WHY CREAM TESTS VARY

By Albert Lynch.

Patrons register kicks occasionally at the creameries that the test of their cream is not holding up. Some people, and very good people, think that they should receive exactly the same test each time they deliver. Variations are bound to occur. Often a change in the test is looked upon as dishonesty on the part of the buyer.

There are several factors that cause variation in the richness of hand separator cream—variations over which the buyer has no direct control and for which he is sometimes put at fault. The chief factors are:

- (1) Speed of turning.
- (2) Levelness of the machine.
- (3) Position of the cream screw.
- (4) Rate of inflow.
- (5) Temperature of the milk.
- (6) Cleanliness of the machine.

Different persons may do the turning. One individual often speeds along a little faster than the one who did it the previous skimming. It is a fact that the faster the machine is turned, the less the cream and the thicker it will be. Even the same individual will vary in his turning. The chance for "human error" certainly applies in turning a separator and the test or richness of the cream will vary accordingly.

A machine that is not properly leveled cannot do the consistent work of one that is set level and solidly. The bowl will not turn evenly; in some bad cases it will wobble, a thing that will vary not only the richness of the cream, but wear out the machine and cause it to skim inefficiently.

Naturally, if the position of the cream screw is changed, the richness of the cream will vary. The other day a patron informed the writer that his son had tightened up the screw on the bowl while playing about the milk house. Scarcely any cream would come out, and what did appear was very rich. Ordinary running has been known to loosen up the screw. These are the little things that the patron does not take into consideration oftentimes when he sees his test go down a per cent or two.

Regulation of the inflow is a factor that causes variation in the test. If the milk is not turned on full, the test will vary because the same pressure is not placed upon the bowl and the same volume is not passing through. This factor is not a very important one, as most machines are provided with a float that is virtually self-regulating.

Some investigators have shown that cold milk is not skimmed as efficiently as warm milk. Most dairymen are agreed that the temperature of the milk should be between 70 and 90 degrees Fahr. to insure best skimming.

A clean separator will always do a better and more consistent job of skimming than one that is dirty and begrimed. At this time of the season no machine ought to be left unwashed over night and cleaned up but once daily. Parts will become gummy. This causes the fat to vary in the cream and some cream may escape into the buttermilk. Economy of the simplest sort teaches that feeding fat valued at 30 cents per pound to calves and pigs is not a paying proposition. It, therefore, behooves a man to get all of the

fat out of the milk. To do this requires a clean separator on the start.

From the foregoing it can be seen that several factors should be taken into consideration in the determination of causes of variation in cream tests. The laws of each state make the buyers give an honest test. Many times if the patrons would study their separators, run them according to the manufacturer's directions, and, above all, keep them clean, the little variations could be accounted for and in most instances overlooked.

TEN REASONS FOR DAIRYING

It enables the dairyman to anticipate and receive a neat and regular income from the sale of milk.

The sale of surplus young stock and cows furnishes an income, in addition to the income for milk, that adds to the profits materially.

It provides a home market and pays higher prices for farm crops than are ordinarily paid at commercial centers.

It utilizes grass and various kinds of feed that have no market value except as they are converted into milk or other salable products.

It provides a means of employing labor regularly and profitably at all seasons of the year.

It makes the farm permanently productive by the utilization of feeds on the farm and the use of farm manures.

The regular income from the sale of dairy products and stock enables the farmer to keep up permanent improvements and to take pride in the possession of a farm home.

Dairying offers one a great opportunity for becoming a thorough business manager and enjoying the game of trying to make everything pay.

It produces a human food for which there is no substitute and for which there will always be a constant demand and an opportunity to supply at reasonable prices.

It offers a most suitable environment for the development of high

standards of living both for a family and a community.—Pacific Homestead.

Successful feeding of dairy cows from an economic standpoint involves the providing of an abundant supply of palatable, nutritious feed, at the minimum cost per unit of feed, and supplying it to the cow in such way as to secure the largest production for feed consumed.

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No matter how small the job all concrete should be thoroughly mixed. The old method of shoveling is tiresome from a physical standpoint and is very unsatisfactory for consistent mixing.

Our foot, steam or gasoline power mixers will solve the problem for you. Made in several sizes and endorsed by all who have used them. Made in Utah.

Write for information and bulletins. **GREEN MACHINERY and MFG. CO.** American Building 338 So. Main St. First Building north of Post-Office Salt Lake City, Utah.



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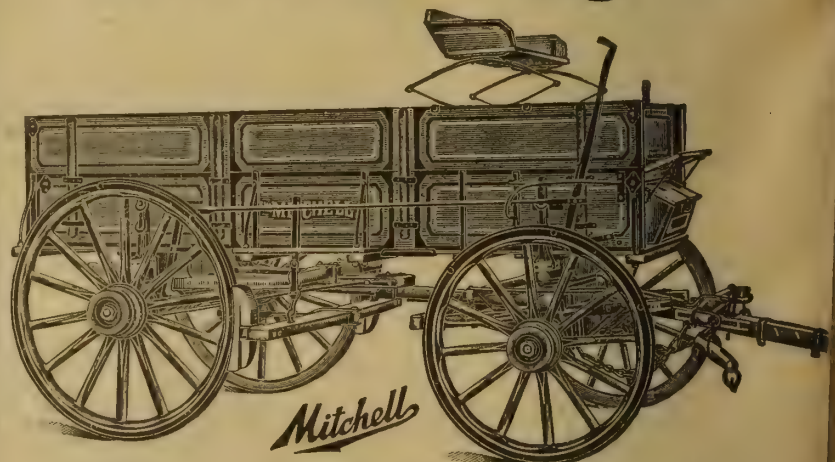


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Utah Implement-Vehicle Co.

SALT LAKE

HELPING THE DAIRY INDUSTRY
(Continued from page 1)
ing to its purity and quality. Such contests are now being held quarterly in six cities and 1610 samples of milk were scored during the past year. The score-card system of inspection has been adopted by practically every city in the West.

Do You Want to Buy a Bull

Experts from the Agricultural College are going to make a buying trip in the interest of a number of our stock men to buy bulls. Do you want them to buy one for you? If you are interested write to Dr. W. E. Carroll at the U. A. C., Logan, Utah, at once. They will help you or any citizen of the State. Act quickly as they are going soon.

MILK AS A STIMULANT.

One of the most recent discoveries of the Pasteur Institute of Paris has to do with stimulating qualities of milk. While milk has always been considered an excellent tonic and known to be exceptionally rich in food value, it was not until the Pasteur Institute conducted a number of conclusive experiments, that the stimulus in milk became a known quantity. For a number of months, milk has been given the French soldiers in the trenches and to many of them it has been the one and only stimulant. The effect which the milk has produced has more than justified the claims which the Institute made for it.

It is claimed that the stimulating effect of milk is especially notable when given to soldiers just before a big battle or a dangerous charge, and also when administered to the troops in great fatigue. The advantage of the milk stimulus over the alcohol stimulus is extensively advocated in previous years is that there is no bad after effects, and the keenness of the senses is in no wise impaired nor the coolness of judgment affected.

The knowledge that milk is a stimulant of no mean force will come as something of a shock to those who have hitherto considered it synonymous with all things mild and peaceful. It is somewhat difficult to believe that the chief product of the patient and gentle cow should contain such an element of forceful stimulation. But, as proof of the contention we have the word of the world's greatest research institutes backed up by conclusive experiments in a place where stimulation of the most efficient sort is needed.—Successful Farming.

DO YOU EVER KNOW THIS BOY.

Did you ever know a boy who owned pigs and the lambs, but whose dad owned all the hogs and the sheep? Did you ever know a boy who didn't like to have a room of his very own with a stove in it, so that he could stay there even on a cold winter night?

Did you ever know a boy who didn't like to have a horse and buggy of his own? How did you like to ask for the horse and buggy every time you wanted to go somewhere?

Did you ever know a boy who didn't work better when he had a share in the crop, or when he had one field in which to do as he pleased?

Did you ever know, from being a boy, how the town-worker boy was envied because he had a room that was all his very own; a room in which he

could leave his trunk and good clothes and know they would be unmolested? Do you realize that the way you felt under these conditions is about the way all the other boys feel?

Did you know that time and thought spent on boys will pay just about as well as time and thought spent on pigs, cows, and sugar beets?—North-western Stockman and Farmer.

An Annual Payroll of \$1,629,200

In the territory we serve through out Utah, Idaho and Colorado, we furnish employment to 2,424 people.

We pay these employees a total of \$1,629,200 yearly.

This sum amounts to over 46 per cent of the total annual earnings of our company. We pay federal, state, county and city taxes each year that aggregate a very large amount.

The constant extension reconstruction and repair work throughout our territory calls for the purchase of many supplies from local dealers.

Therefore, when we say that our growth and welfare is closely interwoven with the development of each city, town and rural community we serve, we but state a fact that must be entirely obvious to every thinking person.

In this connection it may be interesting to you to know that during the past few months over \$700,000 worth of the preferred stock of the company has been purchased in small lots by individuals scattered over a wide area of the territory we serve in southeastern Idaho, northern and central Utah and western Colorado.

It is particularly gratifying to us to know that while the Utah Power & Light Company was originally financed by eastern capital, our customers are gradually acquiring an interest in the company to such an extent that at the present time a large part of the preferred stock of the company is owned by people living in the territory we serve.

It is a condition which clearly indicates that our customers are taking an active and material interest in this home institution.

Utah Power & Light Company

Efficient Public Service



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address, subscribers should be sure to give their
former as well as their present address, otherwise the
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portance to you and to us.

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Utah Horticultural Society, Utah State Dairymen's
Association, Utah State Bee Keepers' Association
Bear River Valley Farmers' Protective and Commercial
Association, Agricultural College Extension Depart-
ment and Utah State Fair Association, Utah-Idaho
Millers' and Grain Dealers' Association, Utah Fruit
Growers Association.

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We guarantee every subscriber against loss thru dis-
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adjust trifling differences between the subscribers and
honest responsible advertisers, nor will we pay the
debts of honest bankrupts. Notice of complaint
must be sent us within thirty days from date of the
transaction, and the subscriber must have mentioned
Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent
upon application.

With the high price of flour comes the sugges-
tion that we substitute or rather that we mix in
some potatoes for our breadmaking.

A farmer, the other day, said he had enough
pasture feed in his fields that would go to waste,
which would feed 500 sheep from now until
Christmas. How many farmers are taking advan-
tage of this feed that so often goes to waste?
Pasture your live-stock in the field until the
ground is wet and soft with winter rains.

FARM LOAN ASSOCIATIONS

The federal farm loan board is active in pre-
paring to put the new farm loan act into oper-
ation. It will be the first of the year before the
location of the twelve federal farm banks will be
decided upon. In the meantime farmers who
desire to secure money under this new loan act
should get busy and organize. If there are any
details about this you do not understand we will
gladly help you. We suggest that you write to
the Federal Farm Loan Board, Washington D. C.,
and ask for several bulletins that give much in-
formation about this new act. They will answer
many questions you want to know.

The real basis of the entire system is the local
organizations of farmers. Ten or more can
organize one. If you are ready to do business
when the Federal Banks are located you will be
able to get your money that much sooner. If
you want to borrow money, or if you would like
to reduce the rate of interest and extend it over
a long period send for the bulletins and then
organize a local association.

SAVE YOUR SEED NOW

The extra demand and high price of all farm
produce will have a tendency to clean up all that
is for sale. Every farmer should save enough
of his best products for seed. It is a poor policy
to depend upon buying your seed in the spring if
you have the right kind of your own. If you
think it best to buy seed, and with many it is
advisable, do it now. For many reasons it looks
like we will have higher prices in the spring
for seed potatoes, grain, etc. The farmer who
knows what he is going to plant next year and
can put his seed away, seed of the best quality,
is on the safe side anyway you want to look at it.

HOW TO SAVE FEED AND LABOR

With the high price of hay and all kind of
feed, anything that will reduce the cost of feed-
ing live-stock will be helpful to the farmer.

A number of our farmers who own, or last year
built, silos are boosting for them because they
save time and feed.

The silo is a place where corn, oats and peas,
barley, and other foods can be put away and saved
for economical feeding. The harvesting for en-
silage can be done at a minium cost with practical-
ly no waste to any part of the crop.

The silo produces a succulent food and this is
important to any one who is feeding a number
of cows.

Next year it is estimated that the number of
silos will be doubled.

VALUE OF GOOD ROADS

We are learning how good roads will save us
time, and help us to get from one place to an-
other at a lower cost. Everyone who has occasion
to use a road, and that means nearly every one
of us, should take an active interest in this pro-
position. Co-operation on the part of farmers
and those who frequently use the roads with help
to keep them in repair. The first cost is small
as compared to the maintaining of a road unless
it is well built for permanency.

Good roads afford an opportunity, for better
schools, more profitable marketing of farm
products. Bring the farmer in closer touch
with the city and its advantages. Give neigh-
bors a better chance to associate together and
be more neighborly.

Good roads save time, labor and money and
add to the joy of living.

COW TESTING ASSOCIATIONS

If there are enough farmers who own from 5
to 20 cows each, living within a radius of twenty
miles, that can make up a total of five to seven
hundred, they should plan to organize a cow test-
ing association.

So many reasons can be given why one of
these organizations will help every member that
it ought to be an easy matter to promote one.

There are several places where we believe
enough cows are owned that will make up the
required number, and it only needs some one to
lead out and start the proposition.

Experts from the U. S. Dairy Division and the
Agricultural College will help, and without cost
to you. They will come and explain how to
organize and tell of the advantage to come from
such co-operative work.

Which will be the first community to lead out?
If you want to know more about these cow testing
associations, write us and we will tell you how
to organize and how to get the help you need.

UNPROFITABLE ACRES

Surely the present prices of farm products will
justify the cultivation of every piece of ground.
In every community, in every county, there are
waste acres of land, land that is not cultivated,
that is not profitable. Only this week in talk-
ing with a government expert about the labor in-
come or profits on the farm, he said that the un-
profitable acres would very much reduce the
average because there are so many acres that
are not producing what they could or should.

It may be that the land is water-logged and
needs draining. It may be only for the want of
clearing of brush, trees or other stuff that pre-
vent cultivation. The amount of time and labor
necessary to put this land in shape, either by
drainage or clearing, is small compared to the re-
turns that come from a good producing acre. The
number of loafing acres on some farms are so
great that it really makes the whole farm unpro-
fitable when considered as a whole.

Study your fields and, in a general way at
least, estimate the profits that come from each
acre so that you can plan to make them more
productive. There is a remedy, it may be better
cultivation, more manure or deeper plowing.
What ever it is find it out and apply the remedy.

DO NOT SELL YOUR STOCK HOGS

It has been brought to our attention that hun-
dreds of stock hogs are being sold throughout the
inter-mountain country, and shipped to Eastern
hog raisers. The reason for this appears to be
that our hog raisers cannot see any profit in
fattening these hogs at the present price of grain,
and the present market value of fatten hogs.

If these Eastern farmers with similar high
prices of corn, as well as grain, can see any
profit in finishing these hogs, why can not the
Western farmer? These people expect to make
some money and they usually do make a profit
from the fattening of hogs.

We have many advantages over the eastern
feeder with our alfalfa, barley and other feeds.
While they may have some things over us, there
is no reason why we can not produce the finished
product as cheaply as they can.

There will be no such low prices for hogs as
we had last year. Indications are, that hogs
are as low now as they will be, some have even
gone so far as to predict that hogs will be 12c or
13c. Many things point to the fact that prices
will be the highest that we have experienced for
a long time. Under these conditions we should
look ahead and plan to produce all the hogs we
possible can.

Why send your hogs, sheep or cattle away to
be feed and finished for market? We have so often
said that the profit comes from feeding your
grains and hay to live-stock.

Do not sell your breeding stock but plan to
raise more live-stock, better prices must come.
With all other food products going up. With our
natural advantages with the grains and alfalfa we
produce, we can finish hogs or any other live-stock
just as good as the Eastern fellow, if we only
put the time and attention to it that he does.

Again, it is the finished products that brings
the best returns. Do the feeding on your farm;
make money in so doing, and return to your land
the fertility that is so necessary for the produc-
tion of big crops.

We would like to hear from any of our readers
on this important subject, especially those who
have had some experience along this line.

PLACE OF RYE ON THE FARM.

(Continued from page three)

It is cut ordinarily with a binder. In some sections, however, especially near large cities, there is a remunerative demand for rye straw for use in bedding horses, wrapping nursery stock, stuffing horse collars, etc. Under such conditions if the straw is especially long it may be necessary to use a self-rake reaper. When the straw is to be kept in good condition a special thresher also is used in many instances.

Pests.

The principal plant pest of rye is wild onion or garlic. The onion bulb-lets are about the same size and shape as rye grains, and, reaching maturity at the same time, are often threshed out with the grain. The presence of the onion bulb-lets reduces materially the price that may be secured for rye. Land badly infested with onions should not be used for small grains. If such land must be used, the rye should be sown late, the land being plowed and prepared just before planting.

The diseases which may attack rye include stem and leaf rust, flag smut, anthracnose, and ergot. The latter is the most serious. It is dangerous to feed rye affected with ergot to live-stock. Treatment of rye seed with formaldehyde, as for oats and wheat, will reduce the likelihood of the occurrence of the most grain diseases. Ergotized grains may be removed by passing the seed through a 20 per cent solution of common salt, the diseased grains floating while the normal grains sink.

MAKE FARM HOME ATTRACTIVE

In the design and construction of the farmhouse the question of utility alone should not be the determining factor. The best thought should be the making of a home. The amount of money to be invested in the building of the home should not be determined by its relation in size to the balance of the plant, nor by the amount that is necessary merely to provide a shelter, but the amount to be invested should be that which the owner may reasonably afford without financially crippling himself too severely. The average city dweller, in buying a house for a home, does not proceed solely on the basis of what he can expect to secure in case it is ever desirable to place the house on the market. He is not likely to consider the purchase of a home as a financial investment but as a social one, which will enable him to secure for his family the comforts and conveniences that he could not secure in rented house, and to have for his family a genuine home, a genuine home life. If he is able, when the time arrives, to dispose of his property to financial advantage, well and good; if not, he considers, and properly so, that he has made a good investment from the social side.

There is no panacea that will cure the yearning for city life evidenced by the country boys and girls of today, but there are certain conditions, which, if established, will add materially to the attractiveness of life in the country, and should therefore prevent them flocking to the cities merely to avoid life on the farm. It is not to be expected that every person reared on a farm will desire to follow farming as a life work, nor is it necessarily desirable that they should do so. Many of the boys will feel a calling to one or another of the professions, and it is probable that if al-

lowed to follow their bent they will be far more successful and contented than if overpersuaded to stay with the farm. The problem is not to force the boy or girl to remain on the farm, but to assist them in every way in making an intelligent choice. Their

choice can not possibly be intelligent unless they are familiar with farm life under its best conditions.—E. B. McCormick.

GETTING RID OF ANTS

To drive away ants from cupboards,

sinks, etc., get 10 cents worth of oil of peppermint, spill a bit on the wood inside of doors, and let the bottle stand uncorked in the cupboard. The ants will soon leave, and it is a safe thing to use and has an agreeable odor.



A COLUMBIA GRAFONOLA

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We offer to send you a brand-new GRAFONOLA on absolutely FREE TRIAL. Simply take it from the express office when it arrives—place it right in your home and use it five days. If you aren't pleased and delighted with it—and if you don't want to keep it, return it to us by first freight. We leave the decision to you. If you are pleased send us a small payment as stated below and small monthly payments thereafter.

The only stipulation we make is that it is up to you to take the instrument PROMPTLY from the express office and that you notify us immediately of the opinion you form after the FREE trial time is up. Of course we want only people who can AFFORD to keep this GRAFONOLA to send for it. We feel quite sure that YOU will want to keep the GRAFONOLA after you have tried it—for in all our years of selling the COLUMBIA GRAFONOLA we have yet to find one dissatisfied owner. Surely that's a record to be proud of.

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We don't require any money with your order, or any C. O. D. payment. You pay us nothing till you decide to keep the instrument. You are under absolutely no obligation to keep it UNLESS YOU ARE SATISFIED. The only condition is that we ask you to take it promptly from the express office when it arrives, paying the net transportation charges. Of course, only those people who are willing to pay the easy terms if the instrument is satisfactory are supposed to have the FREE trial. Remember, if you're not wholly satisfied there's no obligation to keep the instrument. You and you alone are to be the judge.

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Please send me postpaid and FREE, beautifully illustrated GRAFONOLA Catalog and list of records. This does not obligate me.

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The Housewife and the Chemist

Before the manufacture of beet sugar in this country, practically all the sugar used here was cane, except what beet sugar was imported from Europe.

It was hard at first for the housewife to believe that the sugar produced from the sugar beet could be as good as that produced from the cane.

But when the country's greatest chemists, after having made every conceivable test and comparison, declare that sugar is sugar, whether it comes from mountain raised beets or Cuban cane, just as gold is gold whether mined in Utah or Alaska, this prejudice was gradually removed. Housewives today are partial to a home product; they buy—

UTAH-IDAHO SUGAR
ABSOLUTELY PURE

TAKE THE TIME

Investigate this exceptional buy now.

This section is and will in the future be the banner farming section of the State. It will pay you to look it over.

50 acres of very fertile land at Elberta, Utah. Raises all crops successfully.

Within short distance of two good mining camps. Good market for all garden truck.

On railroad giving excellent facilities.

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October Crop Summary

The rainfall of October supplied ample moisture for winter wheat and placed the soil in excellent condition for fall plowing. The mild, open weather furnished the best of conditions for harvesting of potatoes and sugar beets.

Corn harvest was almost completed during the month just past, and although Utah's acreage is not large, the yield per acre was very satisfactory. The dry land corn in the southwestern part of the State yielded particularly well. Much more of the Utah corn crop went into silos this year than ever before. This method of utilizing corn forage to feed livestock, as a substitute for alfalfa, is growing in popularity. Some localities have doubled their number of silos in the past year.

Due to higher prices for potatoes than have prevailed in recent years, some have been led to assume that the Utah crop is short. On the contrary the present crop is the best that Utah has produced in recent years both as to yield and quality. There is a very considerable shortage in the potato crop in the United States, however, which is the controlling factor in prices. A study of the accompanying estimates will show that the level of prices obtaining in Utah is not inconsistent with those of the nation at large.

Sugar beet harvest progressed rapidly during the latter part of October, the weather conditions being almost ideal for out door work of that sort. A larger per cent of the beet acreage planted last spring was abandoned than in usual years. The acreage actually to be harvested is up to that of a year ago—Edward C. Paxton, Field Agent for Utah.

WEATHER SUMMARY

The rainfall during October was the heaviest for that month on record, averaging for the State as a whole 4.21 inches, or 2.97 inches above normal. Nearly all stations with 10 years or more record reported monthly amounts above normal. The temperature averaged slightly below normal, and most stations reported minimum temperatures sometime during the month below freezing, the lowest being 11 degrees at Kelton on the 20th. The highest temperature was 84 degrees at St. George. Threshing was still going on during October but was finished at the end of the month. The abundant rains placed the ground in excellent condition for plowing, and much seeding was done.—Alfred H. Thiessen, Meteorologist.

THE PERMANENCY OF ROADS

Investing money in the proper location, grading and drainage of roads is about the most permanently useful expenditure of public funds that can be made. Usually court houses are considered typical of such an investment, but a well located road is serviceable for a far longer period. The court house is outgrown at the end of a quarter century; if it continues in use longer it must be remodeled and the public officials in its clamor for better quarters. But a road laid out on proper lines and grades serves the public forever, and on that account its location should be made by a competent engineer. Furthermore, even the local roads should be laid out with the same care, so that as the country develops they will improve with it and not require expensive purchases for new rights-of-way. Foresight in

such matters will have valuable results within a comparatively few years in a country growing as fast as the United States.

COOKING EGGS WITHOUT BOILING

Eggs cooked below the boiling point of water are more easily and quickly digested than are boiled eggs. Compared with other foods, eggs are easily and quickly digested. Eggs are a tissue-building food, being rich in protein and mineral matter. They, therefore, serve as a meat substitute and require the addition of carbohydrate material to form a balanced diet. Sweet potatoes, Irish potatoes, or macaroni combined with hard cooked eggs and a white sauce also form an excellent meat substitute.

Ditching and Terracing

Made Easy—\$35 to \$50 buys this wonderful

THE Martin Ditcher Terracer

Will prevent crop failures. Cuts V-shaped ditch, cleans old ditches, remarkable dirt mover. Does work of 50 to 100 men. All-steel. Reversible—throws dirt either side. Adjustable for narrow or wide cut.

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Owensboro Ditcher and Grader Co., Inc.
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Shoes That Shed Water



Prevent your shoes from soaking up the dampness underfoot. Keep your shoes dry and warm, by applying

DUCK-BACK Shoe Oil

Use it regularly. It will preserve the leather and make it flexible. Don't delay. A can of this oil may save a doctor bill, as well as a shoe bill.

Utah Oil Refining Co.

Refiners

Salt Lake City, Utah

Send for Butter Wrappers today.

Farmers, Ranchers, Stockmen

NOW IS THE TIME TO REPAIR THE OLD FENCES AND BUILD NEW ONES.

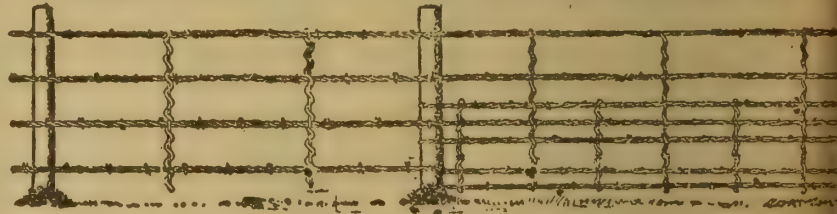
Do it the new way, the cost is but a fraction of the old, and you will not have it to do again annually. Stretch the wire and apply—

THE UNIVERSAL FENCE STAY

"The Fencer's Friend"

"Wires Cannot Spread"

"Stays Cannot Slip"



No. 1 Stock Proof Cattle Fence with Stays

No. 2 Cattle, Sheep and Hog Combination Fence with Stays

Willow and Oak dancers cost from 5c to 10c and serve temporarily. The man who says they cost nothing counts not time, labor, nor material. A ranch with good fences is a credit to the owner and will attract buyers. While the poor fence stops them at the gate.

A Rod of perfect Hog fence made with Barb Wire and these stays costs 30c. Made in length 9 inches to 48 inches. Regular 18 inches, 36 inches and 42 inches.

You see it before you buy and we deliver it before you pay.

Ask for prices on Chicago Steel Posts and all kinds of fencing.

Prices F. O. B. Salt Lake.

UNIVERSAL FENCE STAY CO.

Thomas Austin, Pres. John Dougan, V. Pres. Jas. A. Hooper, Sec. & Treas.

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Questions and Answers

Ephraim, Utah.

Utah Farmer:
Kind Editor:—Please let me ask a few questions through your pages. 1st. What shall I do with my barren rose bushes? My Crimson Rambler and Dorothy Perkins have borne two years in succession and then quit. Last two years have had no flowers on. I have protected them during winter, but they have frozen back quite badly in the spring. I also have one that has never borne. 2nd. How shall I treat asparagus? Allow it to go to seed or lot?

Subscriber.

Answered by Emil Hansen, Superintendent of Grounds and Green-houses, U. A. C.

1. Undoubtedly the trouble you are having with your roses is caused by soil conditions. In order for roses to do their best deep, rich soil is required. If your Crimson Ramblers and Dorothy Perkins varieties show sickly, yellowish leaves, weak growth, and last year's wood is partly decayed the cause is due to water in the ground or to over-watering. Lack of strength and firmness causes them to be winterkilled. For winter protection place a heap of manure around each bush. This should be spread on and then dug down into the ground around the plant during the month of April, at which time the bushes should be trimmed back. Remove all the weakest shoots and keep the strongest, the number retained depending upon the strength of the plant. The remaining branches should be cut back to two-thirds of their original length. In cutting these branches care should be exercised in cutting over a bud which turns outward. The branches of the climbers should be left in their full length unless injured by frost.

2. Allow them to go to seed.

Utah Farmer:

I have 15 acres irrigated land, sandy loam, which is too wet for good production but will be drained the coming summer. The land has been in Alfalfa 3 year but is poor stand, owing I think to being a little too wet. I have decided to put this in grain the coming season and would like your opinion on planting clover of some kind with the grain on this class of land. What kind of clover would be best, and where could I procure the seed.

A Subscriber.

Answered by F. S. Harris.

You might plant clover with your grain to good advantage. Alsike clover is well suited to wet lands. Just at the present time considerable money is also being made raising white sweet clover seed on wet lands. Seed of either of these varieties can be had through any of the Salt Lake Seed houses. You will see their advertisements in the Utah Farmer.

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Logan, Utah.

Please send me illustrated book on **RICHLAND ACRES.**

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Address

I am interested in beet land dairy land

DRAIN OR DREEN

A correspondent asks why it is that the average farmer will pronounce the words

main
grain
bain
brain
pain
gain
plain

exactly as they are spelled but as soon as he sees the word "drain" he calls it "dreen."

PRESENCE OF MIND

"Did you get damages for being in that street car collision?"

"Sure! A hundred for me and fifty for my wife."

"The missus? Was she hurt, too?"

"Not in the crash, but I had the presence of mind to fetch her one on the head with my foot."—Popular Science Monthly.

Care and judgment must be exercised in the methods of feeding heif-

Make Money Sawing Lumber

Every farmer who has a woodlot can make money in his spare time sawing lumber with an "American" Portable Saw Mill. If he has no woodlot, he can do "custom-sawing" for his neighbors at big prices. An "American" mill will saw 2500 feet a day with 8 H.P. farm engine. Profits mount fast. "American" Mills are designed especially for farm use. Easy to move and anyone can operate. Famous for quality for years. Get an "American" and start to make money.

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ers to develop a strong digestive tract. A cow with a poor digestion has no place in a paying dairy.

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YOU NEED THIS FOOD

Send for Butter Wrappers today.

ABOUT BRAISED MEATS

As vegetables are cooked with the meat braising lightens the work of washing extra kettles. The whole meal may be served on one platter, too, which lightens dishwashing.

Braised beef—Select a piece of beef weighing three or four pounds, cut off of the shoulder or under part of the round, and if possible have it at least three inches thick. This last is important, for if the piece of beef is too thin it will fall to pieces in the cooking.

Wash the beef, trim off rough edges; rub lightly with flour and brown on both sides in a frying pan. Place this beef in the vegetables in the kettle and cover with the rest of the vegetables. Cut one-half pound salt pork into dice. If you have no way of weighing the pork, cut enough for a heaping cupful. Then cut into dice or small pieces one large potato, carrot, onion, turnip, a head of celery and one-fourth of a small head of cabbage. If all of these vegetables are not at hand, three or four will do. Divide the cut-up vegetables and salt pork into two equal parts. Place one part into the cooking kettle, then lay the beef, which has been washed and trimmed, on these. Add six whole black peppers, four bay leaves, some parsley, sage, thyme or savory—in fact I usually put in a little of every kind of dried herbs that I have on hand. Pour over this two cups of boiling water, salt to taste, cover closely and put on the stove over a fire that will just keep it simmering gently for from four to six hours. Then lift the meat carefully

on the platter, pour the vegetables around it and serve. Be careful not to let the fire get hot enough to make the contents of the kettle boil briskly or the beef will fall to pieces, and there will be beef stew instead of braised beef. This dish is nice to cook in a fireless cooker or it is equally good in a casserole. Also it is good to have when the housewife wants to go to church Sunday morning, preparing it Saturday night.

LADY BALTIMORE CAKE

Lady Baltimore cake is justly famous all over the United States. The following recipe for this delicious confection is worth trying:

Cream two-thirds of a cup of butter with two cups of soft white sugar or granulated if the other is not available. After a thorough beating add a half a cup of rich sour milk containing a teaspoon of soda. As you mix in the milk add the sifted flour, a few tablespoons at a time; three cups of flour that has been sifted twice should be sufficient, but more may be needed. Lastly, put in the stiffly-beaten whites of four eggs and flavor with rose, almond or orange extract. Bake in layers about two inches deep in a moderate oven.

For the filling grind or chop a cup of seeded raisins, a half a cup of citron, one cup of fresh cocoanut and a half a pound of almonds and a tablespoon of candied ginger cut in tiny bits. Make a plain white frosting and into a portion of it mix the fruit and nuts; spread this between the layers. When the cake is built trim the sides down evenly and cover with the frosting, decorate the top with a design of nuts and fruits, using angelica, whole halves of nuts and candied cherries.

HOW TO PROPAGATE ROSES

(Continued from page three)

important consideration. These should be cut to three eyes. All the leaves should be removed except the top one, and all the leaflets should be removed from this except parts of two. These cuttings may or may not be made with a "heel," which in sense is a piece of older wood at the bottom of the cutting. The cuttings should be planted at once in light loamy soil or in sand in a bed where the atmosphere may be inclosed. A coldframe or spent hotbed is a suitable place if the glass is shaded or a cheesecloth frame is used instead of the sash. For a few cuttings many people have success by inverting over them a fruit jar or a glass dish. The cuttings, however, need to be shielded from the direct rays of the sun when under glass, to prevent burning. The object of the inclosed atmosphere is to prevent undue evaporation from the leaves before roots have formed sufficiently to support the plant. When roots have freely formed, the plants should be transplanted to good soil, watered well, and shaded for a few days from the mid-day sun. Subsequent watering should be moderate until they are well established.

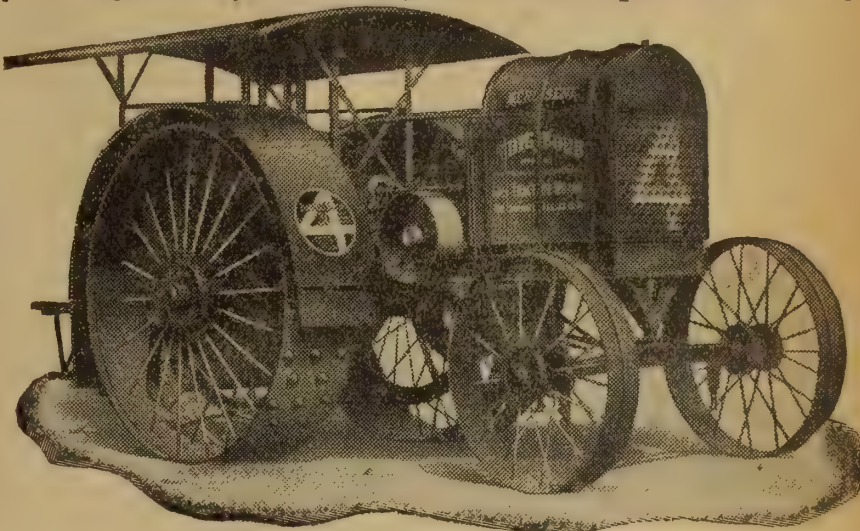
Budding and grafting are not necessary in order to get satisfactory results in growing roses either about the farm home or on the city lot.

City Friend: "Well, Uncle Reuben, you people have something to be thankful for—the death rate is much smaller in the country than in town."

Uncle Reuben: "Yes; folks who have to keep a farm a-goin' don't get time t' die or lie up."

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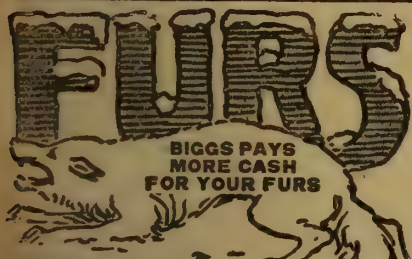
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Engines \$26.75 up
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Tractors \$995

Mention Utah Farmer when you write.

Live Stock

PICK YOUR BREEDERS

I. D. O'Donnell.

Improvements in both vegetable and animal life are made through careful selection and segregation of the strains or types to be perpetuated.

The corn belt in this country has gradually widened and lengthened, not by reason of changes in climate, but by means of breeding various strains of corn, some of which would do well in the warm sections of the country, and others of which would mature in the short-season sections farther north. Millions of acres of semiarid lands in the Great Plains area of this country are being made to support homes through the selection of crops which will thrive and mature in these districts of scant rainfall.

The existence today of many breeds of live-stock suited to the varying needs of man is due to the untiring work of live-stock breeders, who make it the life work of not only one but many generations of a family to bring about excellence in certain types of live-stock. When we consider the great amount of care involved in the fixing of the standard types of live-stock the indifferent attitude of many farmers toward the breeding up of farm live-stock seems nothing short of criminal.

Reasonable care in the selection of breeding stock on the farm would work advantages which, considered for the entire country, would add millions of dollars annually to the live-stock wealth of this country. For example, a farmer has two brood sows; one produces five good pigs and the other nine. It has been demonstrated that the ability of sows to produce large litters is transmitted to their offspring. This fact should lead the farmer to pick his breeding stock from the litter of nine rather than from the litter of five.

To breed mares to standard sires might cost a day's time and \$5 more than to breed to some scrub sire conveniently located. It is a good investment of time and money, however, to use the standard sire, as the colt when 2 years old would easily be worth \$50 more than that secured from scrub sire, and if the colt should be a mare the value through its offspring is increased indefinitely year after year. So it is with all classes of live-stock. The perpetuation of scrub live-stock should be considered a public nuisance where it is possible to improve the breeds. If you do not possess live-stock that is worth perpetuating you should at once get a start of the right kind. Know the characteristics of the live-stock you possess; know which mare, cow, ewe, or sow produces in its young qualities that make profitable farm animals. Get rid of the ones that are not profitable and which produce unprofitable young. Do not make out of your farm a home for decrepit and inefficient live-stock. Pick your breeders.

GILTS SHOULD NOT BE OVER FAT FOR BREEDING

W. J. Carmichael.

They Should Have Plenty of Range and Forage for Their Best Development.

"After the gilts have been selected they need further attention but not necessarily more expensive attention than the market animals require. They should be given plenty of range and forage so as to develop good

Farmers!—Save \$212,000,000 Now Lost Each Year

The U. S. Dept. of Agriculture says "the annual direct losses from animal diseases are approximately \$212,000,000." The indirect losses—lost time, stunted growth, decreased production, due to stock being half-sick—cannot be estimated.

Prevent this waste. First, put your horses, cattle, sheep and swine in perfect health by using

Pratts Animal Regulator

It sharpens the appetite—improves digestion—expels worms—keeps bowels and liver in normal condition—strengthens and tones up the entire system—makes rich, red blood. A natural tonic and conditioner used by successful stockmen for nearly 50 years. Then protect them. Use

Pratts Dip and Disinfectant

to kill all comfort-destroying, disease-bearing lice and ticks and keep the stables and pens clean, sanitary and free from disease germs.

Vigorous stock in sanitary quarters is almost sure to escape disease, and health and comfort mean more rapid growth, greater strength and heavy production. You will save and make money by following this plan.

Our dealer in your town has instructions to supply you with Pratts Preparations under our square-deal guarantee—"Your money back if YOU are not satisfied"—the guarantee that has stood for nearly 50 years.

Write for 64 page Stock Book—FREE.

PRATT FOOD COMPANY

Makers of Pratts Poultry Regulator and Remedies
Philadelphia Chicago Toronto

USING PUBLIC INVESTING PUBLIC SERVING PUBLIC

Mutual Interest

From a telephone standpoint the public is made up of three grand divisions, all equally interested in the growth, development and general success of our enterprise.

The telephone INVESTING public, our stockholders, who furnish money with which to build plant. They are interested because they seek assurance that their investment is safe and that a fair return will be forthcoming.

The telephone SERVING public, our employees, who operate the plant. They are interested because their lives are centered in their chosen vocation, and their material welfare depends upon a remuneration commensurate with the unceasing energy and sincere purpose which they are devoting to this public service.

The telephone USING public, our patrons, whom we serve. They are interested because the efficiency and adequacy of their service depends upon our ability to build plant in pace with the development of the several states, to maintain our plant at a high standard of efficiency and to pay salaries and wages sufficient to attract the most competent employees.

Here is a mutuality of interest involving obligations which must be mutually shared by the entire public.

The Mountain States Telephone and Telegraph Co.

constitutions and given rations which are not very fattening in character," feeds should be included in their daily allowance, because they are being kept to be developed for an entirely

RELIABLE FARM BARGAINS

500-acre farm in Cache valley. Can be had at the extremely low price of \$28 per acre, or will trade the farm for a good cattle ranch. This place can be had on good terms.

540-acre dry farm in Boxelder county. Will exchange for rentable property in or near Salt Lake City or Logan, at only \$6.50 per acre, or will sell for cash, on easy terms.

A GOOD INVESTMENT: 450 acres of good land, 1 mile from the railroad station, 1 mile from state road. All under canal and can be irrigated. This land with water will be worth \$150 per acre. Can be purchased on very easy terms; small payment down, ten years at 6 per cent, and only \$35 per acre.

0 or 80 acres located on state road, 1/4 mile from railroad station, 1/4 mile from school. All under cultivation. Best water rights, which furnish abundance of water. Small payment down and good terms on the balance, at only \$100 per acre.

KIMBALL & RICHARDS

"Land Merchants,"

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Salt Lake City, Utah.

Phone Was. 863.

Farm & Ranch Department.

different purpose than are the market hogs. Hogs for the block must be fat to sell well, but those for the breeding pen should not be very fat to produce well.

"Many people are deceived and buy hogs almost on the basis of their weight alone, and they really lose sight of the size of the frame which supports the weight, consequently they not infrequently buy a 500-pound sow which is very fat and in reality of no larger frame than a smaller looking 350-pound individual.

"Keep the sows, then in a good thrifty condition, not over fat, and let them have all the necessary range, if possible away from other stock, especially horses.

"Some say that the sows are but a half of the herd, or, looking at it from the other angle, that the boar is a half of the herd, and it is fair to assume that this is true when we come to consider the character of the offspring, for they receive one-half of their characters from each parent. One very prominent breeder has stated that if the boar is an average boar he is half of the herd, but if he is a real poor one or an exceptionally good one he is all of it. There is a good bit of truth to that statement."

BRINE CURE FOR PORK

As soon as the carcass has been properly chilled and cut up, it is ready for curing. Rub each piece with salt, sprinkle a layer of salt in the bottom of a good, tight barrel, and over each layer of meat as it is packed in tightly. When the barrel is full, cover the meat with a board and weight it down with a stone so that none of the pieces can float with any part of the surface exposed to the air where it is likely to mould.

Make the brine by dissolving eight pounds of salt and two pounds of sugar in four gallons hot water. This will treat a hundred pounds of meat, and should be poured down the side of the barrel until the meat is thoroughly covered. Four or five days after the brine is put on, the meat should be repacked in another barrel in reverse order so that the pieces which were at the bottom will be on top in the second barrel. Brine should be poured on as before, and the transfer to another barrel repeated in about five days, and this time it should be allowed to remain in the brine about a day and a half for each pound contained in the larger pieces of meat in the barrel, that is, a fifteen pound piece of meat should stay in the brine about twenty-two and a half days, then it should be washed in warm water and hung up for smoking just as in the case of dry-cured meat. It should be smoked with hickory, oak, apple or any other wood except that belonging to the pine family until it suits the taste of the user. About twenty-five smudges make a good, mild smoke.

Many prefer not to use saltpetre or borax, and they should be used in small quantities if at all, for both tend to harden the lean meat, and salt petre gives it a bright red color. Not more than an ounce should be used with each pound of salt. Borax helps to keep off the skippers, but this may be done by proper sacking. If used, it should be sprinkled lightly over the lean surface at the beginning of the curing or just after smoking, but not more than a tablespoonful should be used for a large ham.

Plain syrup, sorghum, or honey may be rubbed on the meat after either

ROYAL BREAD

It's time mother stopped baking, if she has not already done so. Hundreds of mothers, are spending their time at other, more pleasant tasks. They can do this because they buy—

ROYAL BREAD



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From their grocer. This perfect bread is shipped to practically every town in the inter-mountain West, in clean, sanitary cases. Thousands of people enjoy this fresh, pure, appetizing bread. Order it with your groceries.

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Following round trip fares will apply from Salt Lake City to

Denver	\$22.50
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St. Louis	51.20
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Chicago	59.75
Minneapolis or St. Paul	56.44

Proportionately low fares to many other points.

"Let's go back east to old scenes and old friends for a good old fashioned holiday visit."

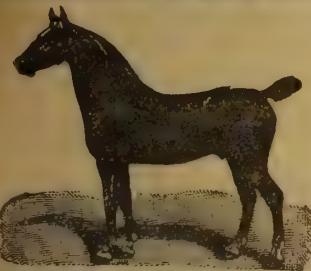
City Ticket Office
Hotel Utah.

the dry salt or brine cure has been completed, and pepper may be added if desired. After it is carefully sack-

ed so that the flies cannot possibly get in, it should be hung in a dry, airy place until needed.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeney, Capped Hock,
Strained Tendons, Founder, Wind
Puffs, and all lameness from Spavin,
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Cures all skin diseases or Parasites,
Thrush, Diphtheria. Removes all
Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism,
Sprains, Sore Throat, etc., it is invaluable.
Every bottle of Caustic Balsam sold is
warranted to give satisfaction. Price \$1.50
per bottle. Sold by druggists, or sent by ex-
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its use. Send for descriptive circulars,
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POULTRY

EGG FARMING THE MOST PROFITABLE

The value of eggs each year in the United States is many millions of dollars greater than the value of poultry meat.

The man raising broilers or roosters gets no profit other than the meat profit.

The man raising eggs has four sources of profit.

1. Marketing eggs all the year;
2. Selected hatching eggs that bring still higher prices;
3. The baby chicks;
4. And an unusual occurrence of fancy fowls.

Most of the risk in the poultry business comes before the chicken reaches the broiler age. The broiler plant, therefore, concentrates its risk in the first few weeks of a broiler's life. In farming for eggs the hatching can be done in the natural breeding season, when conditions are most favorable for the reproduction of chickens.

Farm for eggs and you will minimize your risk.

Like money, eggs are always in demand.

How to Get Eggs

You can't get feathers from a fish.

You can't get eggs from an improperly nourished hen.

Feeding is the factor of first importance upon which rests the success or failure of an egg farm.

During a chicken's pullet year she grows a cluster of eggs—400 to 500 little yolks, each about the size of a berry seed. From this original cluster must be developed all the eggs the hen can ever produce. Profitable feeding for eggs begins at the time of the chick's infancy and continues until the cluster of eggs have gone to market.

What to Feed a Laying Hen

No one has yet found a better food for laying hens than fresh green bone finely ground.

It contains all the necessary fat, protein, and phosphates to assist the hen in producing the egg and keeping herself well and strong. It is an animal food.

In her wild state the hen lived upon seeds, green food, bugs, worms and water. How can we expect her then to do proper work if shut up in a house and fed on dry, hard, cereals, with no change for months except a little water to wash it down?

Corn alone is not sufficient for a hen. Corn to a chicken is like cake and candy to a child. Chemistry shows and experience proves that a laying hen needs starch, gluten, oil, wheat and shell; that she requires green stuff as a tonic and regulator; that she needs animal food to make albumen.

Albumen is the principal part of an egg.

TO PRODUCE BETTER EGGS

The progressive ladies of the Golden district in Wood county, Texas, have organized themselves into a poultry association.

Their plans are to co-operate in building up farm flocks of two or three pure-bred varieties of chickens to sufficient size for each farm to make the sum total great enough to attract the trade; also to standardize the product and hold up the standard both as to chickens and eggs, shipping uniform lots of each.

After the association grows larger, and pervades more territory, they pro-

pose to district the association and let a sufficient number of members in each small district keep breeding fowls to supply the others with fertile eggs for hatching, and all the rest discard their male birds so that all the shipments to market of eggs for consumption can be infertile eggs. The ones producing breeding eggs will get enough above the market price of eggs to pay for the extra expense of keeping high class stock and keeping them in high class condition.

They will guarantee their product and hope to make a reputation that will assure a compensatory market.

They are just beginning but hope to use such business methods in both production and selling as will assure a very large measure of success.

COLD WEATHER IN THE

POULTRY YARD

Cold weather always means more work with the poultry. The chill should be taken on everything to be partaken of by the fowls. Chilling a fowl by allowing it to partake of cold food is just as harmful, and has the same effect upon the fowl as cold quarters.

The water with which the mash is mixed up should be sufficiently hot to warm the food thoroughly. Care should be taken, however, not to make it too hot, or else injury to the bird's crops will result, and that would be worse than cold food.

All grain should be thoroughly warmed before feeding. This is especially true of corn, which gets very cold in the winter. Put your hand into a panful of shelled corn, and then imagine the effect that this painfully cold stuff would have upon the bodily warmth of the bird that consumed it.

Don't think, however, that because you warm their food and water, you can house your birds in any old place, and still have good results. I call to mind just now a man who pays little attention to how his chickens are housed, and then, to counteract this neglect, doses up his fowls with cayenne pepper, hot mashes, etc., thinking that the superabundance of inward heat will make up for the lack of outward heat. Needless to say, he doesn't believe there is such a thing as a 200-eggs-a-year hen.

Variety in feeding is more than desirable; it is essential. Mix all the table scraps in with the mash; nothing better could be found by way of variety. Apple parings and potato parings are usually available every few days at least, with the average family and these, too, should be mixed with the mash. Cooked turnips and beets are good, and so are pumpkins and squashes. We pulverize all the egg shells and use in the mash, taking care to have them broken into very fine pieces, so that their use will not teach the fowls the egg-eating habit.

It is the busy hen that lays the greatest number of eggs, and the idle one that takes on fat and persists in living the simple life. I find that one of the best and most practical ways to give the hens interesting work, while confined to the house in winter, is to supply them with some unthreshed grain in the sheaves. Oats, wheat and rye are the three best grains for this purpose, but I like oats even better than the other two in this connection, because they have no tendency to fatten the fowls, but do have a tendency to cause productiveness among the fowls. In the fall store away enough

(Continued on page 15)

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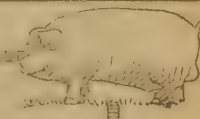
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DON'T PUT THINGS OFF

(Continued from page three)mediate attention; we realize then that it is hard to do the thing just when it ought to be done. But the fact that there are so many good farmers in the country who always do things when they ought to be done, convinces us too easily that continually putting things off is not necessary.

There are thousands of farmers who keep everything up to the dot; and if you look into the matter closely you will find that they are the farmers who are making the farm pay. And after all, you will find that it is just a matter of habit anyway. Get the habit of doing things immediately, and you will soon find it easier to do your work that way than any other.—W. H. L.

COLD WEATHER IN THE POULTRY YARD

(Continued from page 14) unthreshed grain to enable me to supply one or two bundles to every twenty or thirty birds each day that the weather is such that they are kept confined to the house.—F. H. Sweet.

MOREOVER

"What do you call your dog, Rastus?" the Colonel asked the old ducky.

"Ah calls him Moreover," replied the old man.

"Where did you find the name?"

"Why dat's scripiter, Colonel."

"I do not remember any reference to a Moreover in the Bible."

"Why, Colonel, don't de Good Book say dat Lazarus lay at de rich man's gate an' moreover de dawg he come an' lick at his sores?"

HE WON IT

"Who gave you the black eye, Murphy?"

"Nobody gave it to me; I had to fight for it."

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With beautiful music cabinet and 20 rolls of music, DELIVERED TO YOU FOR A FIRST PAYMENT OF.....\$10.00

Balance in easy monthly payments. Price of outfit ...\$466.00

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For price is not the first consideration in this instrument. It is the highly perfected and finished product of the largest manufacturers of musical instruments in the world—the concern known everywhere as the leader in fine player construction—The Aeolian Company. So quality is the first requirement in the Burrland Player—quality worthy of the unqualified Aeolian guarantee.

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SALT LAKE CITY, UTAH.

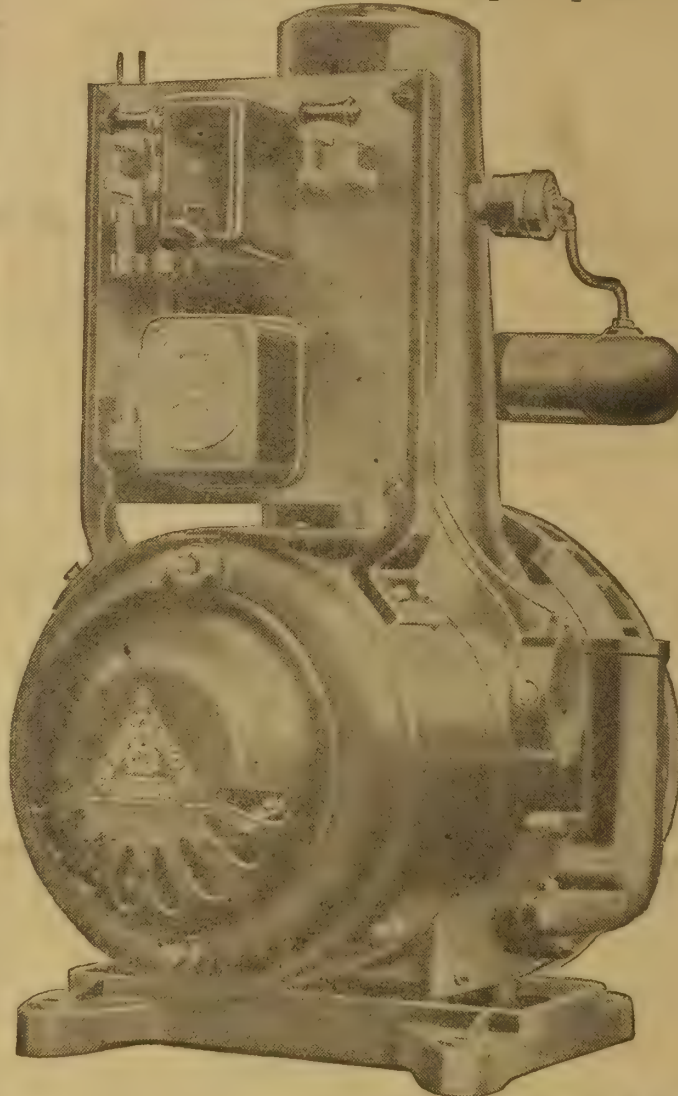
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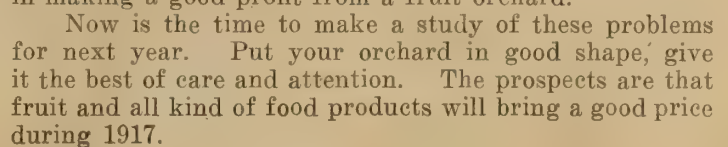
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VOLUME XIII.

LEHI, UTAH, SATURDAY, NOVEMBER 18, 1916

No. 16

Some Timely Suggestions About Silos

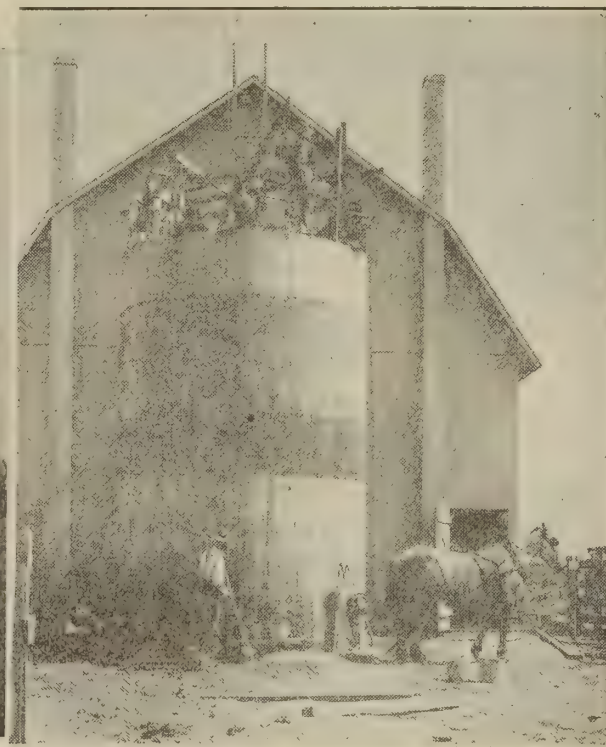
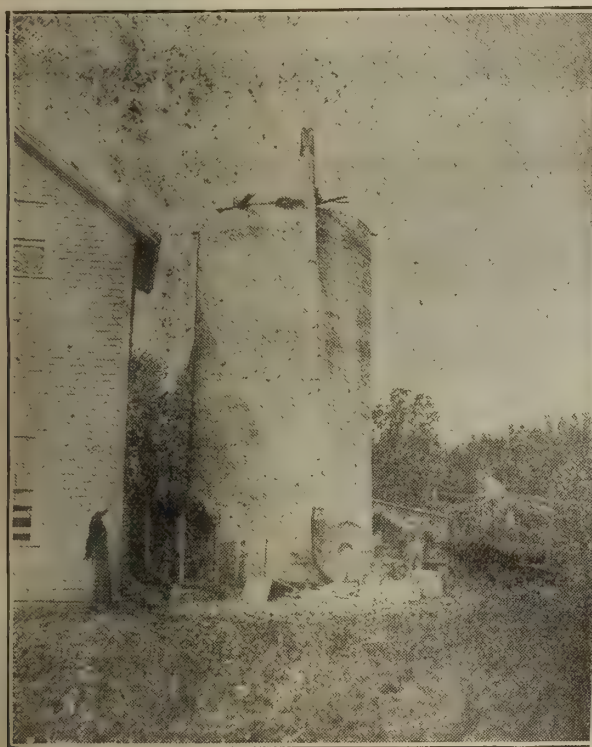
By Ben R. Eldredge.

In some localities many new silos have been erected in the past few months. These silos are going to be great money savers this winter for hay is going to be unusually high. The high price of hay, in fact, during the present feeding season will stimulate interest in the silo and the coming season will see an unusual number of new silos erected. Probably during the winter season, when other work is slack, some farmers will haul gravel and sand to be used later in silo-building. Where this is the case the material should be kept

diamond mesh concrete reinforcing material; that is, the woven wire that is put out by the large wire companies to meet the requirement of cement concrete work. Sometimes when this material, either the fencing or the diamond mesh reinforcing, is used, it should be placed near the outside of the wall. This is important in order to get the greatest strength and best value out of the reinforcing; yet, it is often hurriedly placed and little attention being given, the result is that the reinforcing is crowded to the inside of the wall, where it has it's

about five days after filling, this curve in the steps will be the weakest place in the whole circumference of the silo, and the result will be possibly a straightening of the bend in the step, which will throw an undue leverage on the concrete in the edge of the doorway and a cracking and scattering of the concrete is almost sure to result; especially, if every care has not been taken to keep the door jamb properly reinforced and tamped with the very cleanest of material entering in to the concrete mix. When the pipe I have mentioned, that is used for up-

directed to different parts of the silo is a great labor saver and is well worth a reasonable cost. Should the silage be too dry, water must be added and especial care given to packing or ramming while filling. It is difficult to give a definite rule as to just when corn will be ready to go into the silo or there is such a difference in soils, and the amount of moisture in the soil to a great extent governs the amount of moisture in the silage crops. The same variety of corn; for instance, when planted on a gravelly bench, will need a little different handling



The silo is going to be an important factor in the future development of our live-stock industry. Four years ago we had very few, if any, silos; today we have four hundred. Next year will see several hundred more silos built in Utah.

a compact pile; not be permitted to spread out in such a way that when it is used it will carry rubbish and dirt; for one of the essentials in good construction is clean sand and gravel. I am, of course, assuming that everyone now is converted to the concrete silo for Utah valleys. Good cement concrete cannot be made from rubbish. Sand that is loamy should not be used, and proper proportions of gravel and sand are necessary. In measurement, one of cement, two of sand and four of gravel are the proper proportions for best results. Good reinforcing is necessary and the reinforcing should be properly placed. The best reinforcing is the

least value as a strengthening factor in the wall. The reinforcing should be well fastened at the ends and where a continuous door is used, as it most often is, in Utah silos, the reinforcing should be wrapped well around the pipe that is placed a few inches back in the walls from the door jamb, and this pipe should be at least 1 1/4 inches in diameter. The steps that should be on a straight line form pipe to pipe. Sometimes it has happened that these steps have been curved to give a better toe-hold but when the tremendous lateral pressure comes the right reinforcing inside the door

jamb, is too small then we do not get the strength that is required to properly stiffen this part of the wall. The above are just a few items that are important in silo construction. Now, there are a few things to be bourn in mind at filling time. Where the weather will permit it is best to let the corn come to early maturity, so that the kernels of the corn will be fairly well glazed. Then, keep the silage evenly spread as filling progresses and tramped at the edges. The heavier part of the silage will naturally fall to the center and without some attention there would follow a slack fill at the edges of the silo. Some kind of a distributor by which the silage can be

than when planted two miles distant in a loamy soil with clay for a sub-soil. Under these conditions, the plant will carry quite different amounts of moisture, as maturity approaches; and a little judgment is necessary as to when is the best time for filling. It is best to get the corn into the silo before it is frosted, when it is possible, but when other work will not permit of this being done, do not think that the crop is ruined if frost gets it, but get it in as soon as possible and add water to take the place of the moisture that escapes when frost has shattered the leaves. Then plan a little better next season.

Dry Feet Without Rubbers



Children do not like to wear rubbers. But when they go out into the wet without rubbers it generally results in sickness, unless their shoes are waterproofed with—

DUCK-BACK Shoe Oil

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Dairying

FEEDING THE DAIRY COW IN THE WINTER

A Balanced Ration Necessary to Furnish a Good Flow of Milk.

The tendency is quite general to deny the dairy cow a sufficient variety in her feed, and to feed alfalfa for instance, largely to the exclusion of other valuable materials, according to a statement made by Professor Ben R. Eldredge.

"In feeding dairy cows we should bear in mind that in the feed we must supply the elements that will be required for sustaining the body of the cow and furnishing her with the necessary material for the production of milk. A little thought will at once lead us to the conclusion that quiet a variety of material is required, while very often our feeding is restricted to but one article during the entire winter feeding season, and that article is lucerne hay.

"In Utah we produce lucerne abundantly and have a splendid climate for making it into hay, so that Utah lucerne is one of the best feeds that we can possibly place before our cattle, but it is only one feed and some of the elements that are required by the dairy cows are furnished in lucerne in too limited quantities. Lucerne is a great flesh former but it is low in the elements that produce heat and energy. These are contained in a higher proportion in the corn plant and in barley. It has been found that a ration made up of some lucerne and some corn silage with a mixture of bran and barley as a concentrate will give far better results and will maintain a better degree of health with dairy cattle than can possibly be gained by feeding lucerne alone.

"It has also been found that a most healthful and economical form to feed the corn in is in the form of silage; the silage not only is a good supplementary feed as far as its composition is concerned, to go with lucerne, but carrying a large amount of the sap contained in the plant harvested at its most nutritious stage, it has succulent properties (sappiness) that make it one of the best substitutes for grass that we can produce for winter feeding. When silage cannot be had roots such as mangel wurtzel may be used to take its place.

"A fair ration for the feeding of a cow weighing 1000 pounds and giving from 20 to 25 pounds of milk per day, and which milk might contain a pound of butterfat, would be as follows: 10 pounds of lucerne hay, 30 pounds corn silage, 3 pounds ground barley, and 3 pounds bran, or 20 pounds lucerne hay, 4 pounds ground barley, 2 pounds bran, and 12 pounds to 18 pounds mangel wurtzels.

"The grain should be mixed and divided into two feeds. What I have suggested above is the approximate quantity for a day's feeding. Larger cows will require more and cows giving a larger quantity of milk must be fed in proportion. In feeding a grain mixture, a good guide is about one pound of mixture to from three to four pounds of milk, according to the condition of the cow and the butterfat contents of her milk.

"Before leaving the subject of feeding it is well to mention watering. Dairy cows should have an abundance of pure water and in the winter time the water should not be icy cold. A temperature of from 50 degrees to 60



Simple---Solid---Sanitary

These are the three qualities that make Loudon Equipment so popular among the most up-to-date and progressive farmers and dairymen of today.

In this day of high-priced feed and costly upkeep you must get the biggest possible returns from your cows if you expect them to be a profitable investment. This can be done only by giving them the comfort and freedom of Loudon Steel Stalls and Stanchions.

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Farmers, Ranchers, Stockmen

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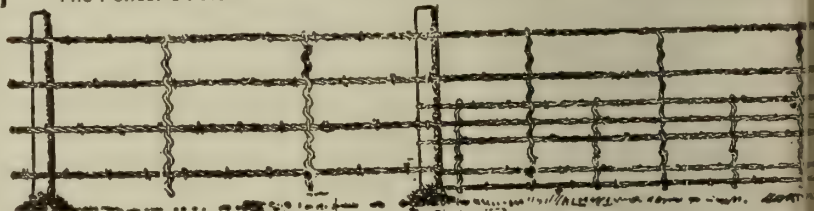
Do it the new way, the cost is but a fraction of the old. Stretch the wire on Chicago Steel Posts and apply—

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"The Fencer's Friend"

"Wires Cannot Spread"

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No. 1 Stock Proof Cattle Fence
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No. 2 Cattle, Sheep and Hog Combination
Fence with Stays

Willow and Oak dancers cost from 5c to 10c and serve temporarily. The man who says they cost nothing counts not time, labor, nor material. A ranch with good fences is a credit to the owner and will attract buyers. While the poor fence stops them at the gate.

A Rod of perfect Hog fence made with Barb Wire and these stays costs 30c. Made in all sizes. Regular 18 inches, 36 inches and 42 inches.

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Drive twenty-one Steel Posts while digging one
Hole for Cedar. Build a mile a day.

Prices F. O. B. Salt Lake.

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SALT LAKE CITY, UTAH

Thomas Austin, Pres. John Dougan, V. Pres. Jas. A. Hooper, Sec. & Treas.

degrees is about right, summer or winter. Some springs, flowing wells, and dug wells produce water at about these temperatures."

SILAGE FOR DAIRY COWS

Cows fed a ration composed largely of silage produced 17 per cent more milk and 28 per cent more butterfat than those given a ration consisting mainly of grain in a feeding test conducted for 121 days at the Ohio Experiment Station. The silage ration was also cheaper for milk production.

The cows gained nearly 8 per cent in milk yield when put on the silage ration. The produced butterfat at a cost of 13 cents a pound, while the cost of a pound from the cows fed mainly grain was 22 cents. There was little difference in the gains in live weight between the two lots.

In addition to 58 pounds of silage and 6.8 pounds of hay, the one lot received only 4 pounds of grain consisting of oilmeal and bran. The grain-fed lot received only 12 pounds of corn stover and hay but 13.5 pounds of a grain mixture of oilmeal, cornmeal and bran.

Whooping Cough and Measles

Dr. T. B. Beatty, Secretary of State Board of Health.

In some localities, whooping cough and measles are epidemic and only the enforcement of the most rigorous measures can prevent serious extension of the infected areas.

It is depressing to contemplate the unnecessary, because preventable suffering and loss of child life that is in store. These diseases are universally among the most difficult to control because of the fixed and time honored belief in the public mind that they are so mild and devoid of danger to life that precautions are unnecessary.

It is only necessary to consider the true facts and statistics to prove how dangerous and misleading are these fallacies. In 1915 whooping cough destroyed ten times as many lives in Utah as scarlet fever and twice as many as diphtheria.

Whooping cough especially is one of the most fatal of diseases in infants under two years of age. Permanent physical impairments from complications frequently follow both diseases.

The belief that all children must necessarily contract whooping cough and measles is wholly ungrounded. They are contagious and only communicated by contact with a person affected. Therefore if each case were promptly isolated until recovery, absolute control of the infection could be accomplished. The solution of this as of other public health problems is education.

The disease under discussion destroy many more lives in the United States than infantile paralysis, which has created such alarm throughout the country, but it is the unusual that excites dread and induces defensive activities.

Much of the menace from these diseases could be removed if all mothers of children having the disease would isolate them and prevent contact with other children.

Measles begin with symptoms resembling a cold, such as running at the nose, fever and cough, which continue for several days before the rash appears.

Whooping cough begins with an ordinary cough and the "whoop" generally does not appear for several days. It is in the early stages that both diseases are the more contagious and children with the symptoms described should not be allowed to attend school or mingle with other children.

The situation demands the earnest co-operation of parents, teachers and health officials and the arousing of an active public sentiment.

REMOVE THE RUBBISH

When I moved onto the place it was overgrown with weeds, littered with crop remnants, and fringed with high grass strewn with boards, sods, and other trash, under which insects

SHEET MUSIC

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DAYNES-BEEBE MUSIC CO., Salt Lake

swarmed and disease lurked. By cleaning the grounds and its borders, the soil has quit producing weeds and crop pests and is putting its full strength into valuable crops. I have no weeds, no diseases, and but few insects.

Salt is required by all animals. The dairy cow requires an ounce or more a day, and while she should be given

all she needs she should not be forced to take more than she wants. It is best, therefore, to give only a small quantity on the feed and to place rock salt in boxes in the yard where she can lick it at will.

Jagson: "He said that, did he? Why, didn't you call him a liar?"

Meekson: "That's just what I'll do. Where—where is your telephone?"



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TILE DRAINED

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Unsurpassed primary water rights and excellent flowing wells of purest water.

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OFFICIAL ORGAN

Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers Association.

OUR GUARANTEE

We guarantee every subscriber against loss thru dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent upon application.

Use good sires, for the sire is half the herd.

Plan now to make a farm blacksmith shop so that during the winter you can use it in repairing and building your machinery and tools. A small outlay for machinery and tools will equip the shop and will pay for itself many times over during the year.

Do not expect your calves to make a good growth this winter unless you give them a balanced ration. You know what feeds you have, make up your own ration for the best growth possible.

If you have a cellar put some vegetables away for winter use. If you do not have a good cellar in which to store them the trench method will be found satisfactory for storing turnips, cabbage, carrots, parsnips and other vegetables. The trench should be on a spot that is well drained. Vegetables thus stored away will be relished during the early spring months.

We can not see any common sense in tying your machinery to a wire fence for the winter. It does not help the fence any. Judging from their methods some farmers prefer to allow their implements to "go to waste" rather than build a cheap shed or covering for them. Machinery is now higher in price than it has been and prospects are, it will go still higher. You will save money and show good common sense if you will protect your machinery from the storms of winter.

In nearly all our towns it is possible during the winter to secure a supply of ice merely for the cutting and hauling. Why not build an ice house, one that will be large enough to supply your own needs and possibly let your neighbors have some?

After studying the returns from farms in many sections of the United States, in nearly every case, the farmer who has some live-stock on his farm is the one who is getting the best returns.

DON'T BURN THE LEAVES

Just previous to this storm one could see smoke arising in scores of places from burning leaves. Too often the place where these leaves are raked up and burned is in need of some kind of fertilizer.

The falling leaves seem to be nature's way of fertilizing our forests. Under forest trees, where the leaves have fallen for a great number of years, the soil is very rich and fertile.

If dead leaves are so helpful to the forest soils, it is equally true that they will be helpful to the garden. What our soils generally need is humus, and the leaves will help to supply it.

Do not burn the leaves but let them help fertilize your ground.

USE MORE SALT

Some of our live-stock farmers know the value of salt for their animals. A little should always be kept in the feed box or in the pasture where it is accessible to every animal on the farm.

Rock salt, in large lumps may be provided, even when out in the weather the waste is very small.

People who have had experience say that to have salt always accessible is a good way to protect your animals from light digestive troubles. Many instances might be given to show that salt has helped a herd of sheep, a cow or other stock, but this is only to remind you of the value of rock salt and to see if you have some where your cattle can get at it.

GOVERNMENT WILL FIGHT CONTAGIOUS ABORTION.

The seriousness of contagious abortion among our live-stock is not fully realized by many of our farmers. A government expert the other day said he considered the fighting of abortion of more importance than the fight against tuberculosis in cattle, because we are troubled with more abortion in this state. This disease costs cattle owners in our country around twenty millions of dollars a year according to government reports. An appropriation was made by the last Congress for studying abortion and its control. An article is given in this issue telling some of the things cattle owners should do to protect their stock from this serious contagion. Now is the time to help the government, and the live-stock industry by keeping this menace out of our state as much as possible.

YOUNG STOCK SHOULD HAVE GOOD CARE

One can demonstrate one's ability and capacity as a breeder by the care and attention he gives to his young live-stock. Only the most careful attention, a solicitude that never fags, will bring the best results.

Protection from pests and disease, because this has a great deal to do with the growth and development of young animals.

The proper feeding, a study as to the best ration for the development and growth, for much

depends upon the growth while young as to the development into good beef, good dairy cows, good horses, sheep or hogs.

Providing comfortable quarters, protection from the extreme heat of summer or the extreme cold of winter. Young, tender stock of any kind needs the tender and merciful care of a kind owner. Tender and sensitive are the young, and their growth is easily stunted and hard to overcome later in their lives. It is like money well spent to give good care to young and growing live-stock of any kind.

UTAH PRODUCTS WEEK

To encourage the use and advertise the sale of products manufactured in Utah, the Manufacturers Association will hold what they call Utah Products Week, November 19 to 25.

The women of the state are going to take part, their Sunday, November 19, dinner will consist of Utah Products. They will also give a program at their meeting.

The schools will take part. Prizes will be given for the four most complete lists of factories of Utah, with the towns in which they are located and the products they manufacture. Speakers will also visit the schools and tell the children about Utah Products.

Prizes will be given in all the larger towns for the best decorated window done with Utah Products.

Special meetings will be held in the larger towns, when representatives of the Utah Manufacturers Association will be present and give talks about Utah made goods.

The movement is on a big, broad basis, no particular product is spoken of, but a boost is given for every article manufactured in Utah. Many men who are not directly interested in manufacturing are helping in the movement because they feel that anything that helps Utah will help their business.

We believe the people of this State will observe Utah Product Week and encourage the local manufacturer in the sale of his products.

HAVE YOU ANY PURE-BRED BULLS FOR SALE

There should be ready sale for every pure-bred bull in the state, because of the new law that goes into force the first of the year.

The man who may have some for sale will ask—how can I sell mine? How is the buyer and seller going to get together?

How is the man who wants to buy a bull going to know you have one for sale?

Some of our farmers go to work and make a start at raising pure-bred cattle. Few, if any, outside of their own immediate vicinity know about the stock they are producing. They are successful in breeding and raising quite a large number but when it comes to the selling, they have another problem—that is finding a market for pure-bred cattle. They have failed to do one of the things so necessary in this branch of farming—to advertise.

There are many different ways of advertising, any one of which may bring results. It is part of the game, however, to let people know what you have for sale. Many times local people go away to buy when just as good or better might be bought at home, but they did not know you had any for sale. Now—who is to blame? Let the other fellow know what you have for sale. Tell them the kind, quality and number you have for sale. In other words advertise.

COMMERCIAL VARIETIES
OF ALFALFA

"Common alfalfa" is a term that is used to include all of the alfalfas that are not clearly of hybrid origin or that do not have distinct and uniform varietal characteristics, such as the Peruvian and Arabian varieties. Numerous strains are coming to be recognized in the "common" group. They are often designated by the geographic name of the locality where grown, as Kansas-grown alfalfa, Montana-grown alfalfa, and many others, or by some term descriptive of the conditions under which the crop has developed, such as dry-land alfalfa, irrigated alfalfa, and non-irrigated alfalfa.

Strains developed in the South usually produce larger yields than those developed in the Northern States, but they are less hardy. The "dry-land" alfalfa seed offered on the market has so far failed to show any noticeable superiority in ability to resist drought over that grown with an abundance of moisture.

The commercial Turkestan alfalfa has been tested quite thoroughly in all parts of this country, and in nearly every case has proved inferior to American-grown strains.

The leading commercial strains of variegated alfalfa are the Grimm, the Baltic, the Canadian variegated, and sand lucern. With the exception of sand lucern, they have been found more resistant to cold than other commercial varieties or strains and are therefore recommended for sections where winter killing occurs frequently.

Peruvian alfalfa is not resistant to severe cold and can be grown successfully only where the winter temperature is comparatively mild, as in the Southern and Southwestern States. Under favorable conditions it outyields any other commercial strain.

Arabian alfalfa is not a satisfactory variety because of its tendency to be short lived.

As a result of numerous experimental tests the adaptations of the various

varieties and strains of alfalfa have been quite definitely determined.

It is highly advisable that the farmer should learn to distinguish good from poor seed. Plump seed of an olive-green color almost invariably germinates well, while shriveled or brown seed generally germinates poorly. The presence of any appreciable quantity of weed seeds or other impurities indicates a poor quality of seed.

Owing to the fact that alfalfa does not produce seed satisfactorily under

humid conditions, there is little use in trying to grow it for seed in the Eastern States.

Breeding work with alfalfa offers great possibilities, but the time and expense involved are so great that a farmer can not afford to undertake it.

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TAGS



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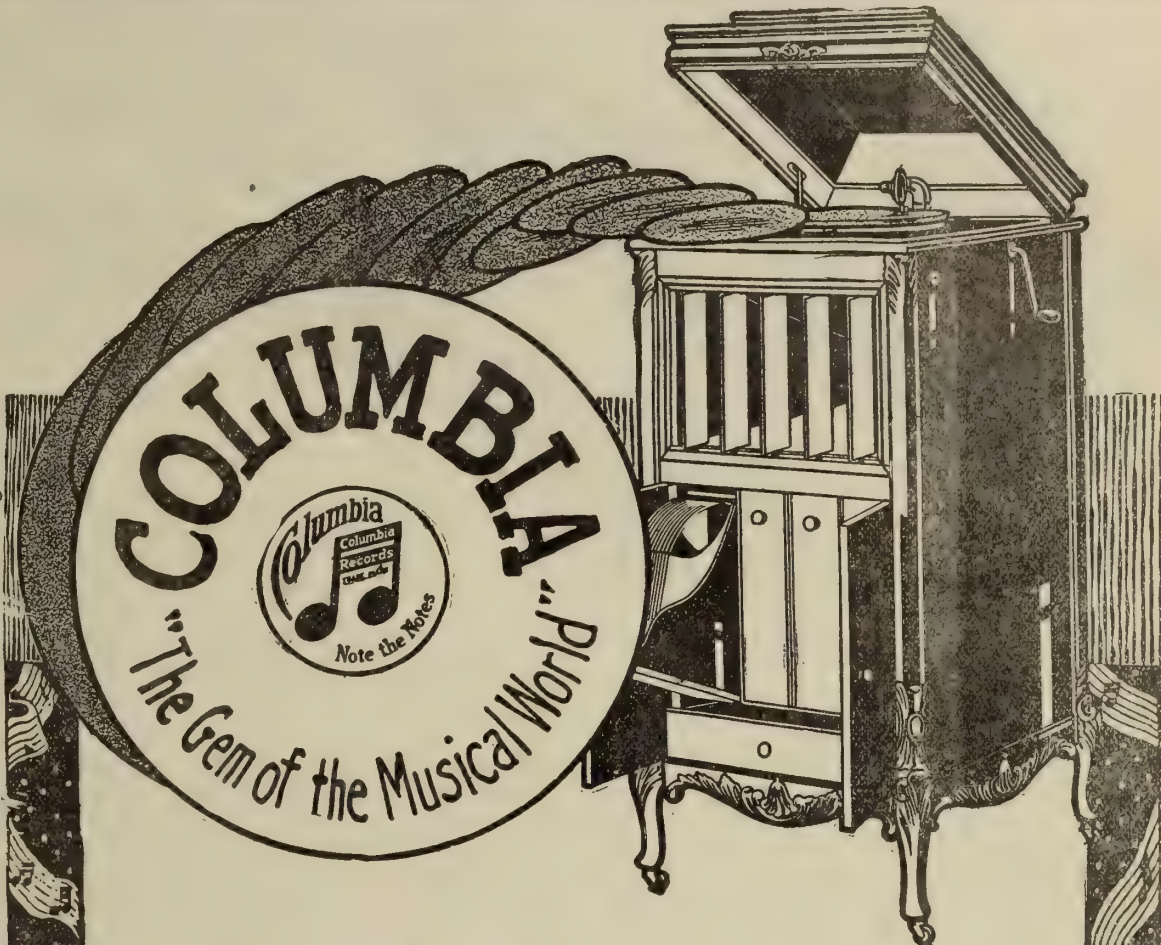
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The only stipulation we make is that it is up to you to take the instrument PROMPTLY from the express office and that you notify us immediately of the opinion you form after the FREE trial time is up. Of course we want only people who can AFFORD to keep this GRAFONOLA to send for it. We feel quite sure that YOU will want to keep the GRAFONOLA after you have tried it—for in all our years of selling the COLUMBIA GRAFONOLA we have yet to find one dissatisfied owner. Surely that's a record to be proud of.

No Money in Advance—No C. O. D.

We don't require any money with your order, or any C. O. D. payment. You pay us nothing till you decide to keep the instrument. You are under absolutely no obligation to keep it UNLESS YOU ARE SATISFIED. The only condition is that we ask you to take it promptly from the express office when it arrives, paying the net transportation charges. Of course, only those people who are willing to pay the easy terms if the instrument is satisfactory are supposed to have the FREE trial. Remember, if you're not wholly satisfied there's no obligation to keep the instrument. You and you alone are to be the judge.

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We'll send you by first mail—with no delay and no obligation on your part—complete catalogs showing all styles of the GRAFONOLA and list of records by the world's greatest musical talent. Even if you don't buy, these books give you valuable information about the best music. Write at once—now while you have this advertisement before you.

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"OLDER THAN THE STATE OF UTAH."

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Please send me postpaid and FREE, beautifully illustrated GRAFONOLA Catalog and list of records. This does not obligate me.

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So much more for

This car sells itself to anyone who starts out to get the most for his money in a good, big, roomy, five passenger car.

Comparison proves a plain case to anyone who cares to know.

You don't have to be an expert or have any special knowledge to determine the big extra value you get in this car.

Its advantages stand out so boldly that they cannot be overlooked in a comparison with any car selling for \$795—or for a great deal more.

You get more power—35-horsepower motor—more than 250,000 in use.

You get more room—112-inch wheelbase.

You get greater comfort—long, 48-inch cantilever rear springs and 4-inch tires.

You get greater convenience—electrical control buttons on steering column.

You get bigger, safer brakes—service, $13\frac{3}{8} \times 2\frac{1}{4}$; emergency, $13 \times 2\frac{1}{4}$.

You get better cooling—you never heard of an Overland overheating.

This is the biggest car we have ever had to sell until now—more than \$1000.

In fact it's a thousand-dollar car which the economy of our enormously increased production enabled us to sell for \$795.

If you want the most money in a big, comfortable, roomy, five-passenger car of long proven reliability and superiority—here is an argument possible only in this car. You can determine the value for yourself.

Catalog on Request. Please send for it.

The Willys-Overland Company

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the money

And back of the car is the largest and most successful automobile concern in the world that produces cars of this size and class.

And back of it also are the best established, most successful automobile dealers to be found.

You can't beat such a combination—a car that everyone knows is 100% right mechanically—a car that is priced so low that extra value sticks out all over it—a big strong thoroughly established concern back of the car and a successful enterprising local dealer to do business with.

See the Overland dealer in your nearest town—he will gladly show you the car—demonstrate it—give you a prompt delivery—and render prompt, efficient service as long as you own it.

Now is the time to buy—when you've time to enjoy your car and lots of good driving weather.

And when things freeze up, put on your curtains and go anywhere comfortably in any kind of weather all winter long.

Same model, six cylinder—35-40 horsepower—116 inch wheelbase, \$925.

755

y, Toledo, Ohio

\$795

Model 85-4—f. o. b. Toledo

From the frozen

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to the

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tropics**Baker's****Cocoa**is known
for itspurity
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quality.Walter Baker & Co. Ltd.
ESTABLISHED 1780 DORCHESTER, MASS.**HOME****THE FOOD VALUE OF MILK**

W. B. Barney

We hear much in these days about preparedness. A people that is not well fed and nourished cannot to the fullest extent enjoy the blessings of peace or withstand the devastation and horrors of war. Wholesome, well cooked food will without doubt play a greater part and receive more consideration from this time on than ever before. If there is anything in the practical application of the precept that each man must be his brother's keeper, this will apply with double force to his body and every commissioner in this land.

That we, if we shall do our full duty, are going to pay more attention to the preparation, care and cooking of food is quite evident. It was my lot to put in a number of years on the road, depending on hotels and restaurants for my meals. During this time I was too frequently reminded of the old saying that "The Lord furnished the victuals and the Devil the cooks."

Our domestic science schools are doing a vast amount to remedy this. It is my belief that much can be done in the home. The housewife that cannot properly prepare, cook and serve a meal is not worthy of the name of wife. The mother that does not see that her daughter is schooled and learns the fundamentals of cooking is neglecting an important duty that she owes the daughter, the daughter's husband, if she has one, and the public at large.

Too many meals are eaten simply to satisfy the appetite, not because they are appetizing. If what we eat today is walking around, thinking and talking tomorrow, is it not important that this food or fuel for the human body be of the right sort and properly prepared?

A locomotive or other engineer would not expect to get good results from the use of an inferior grade of fuel. If a certain kind of coal is known to produce a given quantity of steam this brand is dependable and would be selected in preference to another having less generative power.

For years, a study has been made of the fuel question. It is well that of late more attention has been paid to the value of the different articles of food in common use. This question has an economic, as well as a moral side. It matters little how well we know that 8½ worth of milk (or one quart) equals approximately 22c worth of round steak, or 25c worth of eggs, or 75c worth of oysters, unless we do what we can to disseminate this knowledge.

Aside from the value of milk as a low priced fuel and cheap source of protein, its life-like substances and life-giving properties are as yet little known to the public. Recent studies of milk and milk products have shown why physicians and dieticians are able to get results with milk that are not possible with other foods.

Scientifically these life-like substances are called vitamins. Their presence in milk and butter is very easily demonstrated. Vitamins are not present in vegetable oils, or the common fats used for the manufacture of oleomargarine. Oleomargarines contain the life-like substances only in proportion to the amount of butter they contain. We all know that most of the oleomargarine contains so

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They've
got the
Red Ball
on them**I'll buy a pair**

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The Red Ball is the trade mark of

BALL (Red) BAND**RUBBER FOOTWEAR**

It is a quality mark—an indication of long wear, real comfort and perfect fit. Any footwear you buy with that Red Ball on it is going to give you satisfaction.

Look for the Red Ball Before You Buy

It's on every piece of "Ball-Band" Footwear. "Ball-Band" Rubber Footwear has the reputation of giving more days wear at a lower cost per days wear than any other. That wide reputation is the reason why nine million people wear "Ball-Band" Footwear. It is not an accidental reputation.

"Ball-Band" Rubber Footwear is sold by 55,000 dealers, most of whom show the Red Ball sign.

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*"The House That Pays Millions for Quality"**"More Days Wear"*

is the name of a little booklet that gives some very helpful hints on the proper care and wear of "Ball-Band" Footwear. It shows many different kinds of boots, shoes and arctics for bad weather.

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DOUBLE SERVICE
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Absolutely Punctureproof

Double Service Tires are made double the thickness of the best standard make tires.

This 100% greater wearing surface naturally gives that much more mileage and service. The average of 12 miles of tough

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These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—the air space and pressure being the same.

They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use in the U. S. government and European War service.

Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer:

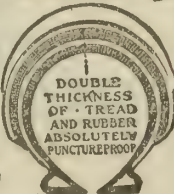
PRICES

Tires	Prices	Tires	Prices
30x3 in.	\$8.60	36x4 in.	\$17.45
30x3½ in.	10.85	36x4½ in.	21.20
32x3½ in.	12.75	36x4¾ in.	22.60
32x4 in.	15.75	38x4¾ in.	23.60
34x4 in.	16.70	38x5 in.	26.30

All other sizes not included in above list also furnished. Non-skids at 10% additional. Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.

Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Descriptive folder upon request. Write for it.

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Mention Utah Farmer when you write.

small a quantity of butter as to be negligible.

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Write for new booklet, "Opportunities for pleasure and profit in trapping"—also shipping tags, price lists, etc., **ALL FREE**

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do our work in a way that will meet with the approval of our own conscience and all fair minded people.

HOUSECLEANING HINTS AND HELPS

Mary Johnson.

Begin house cleaning with the bureau drawers and closets and you'll come across many an old garment suitable for dusters, house cloths, etc., rip them up, cut off all strings, buttons or hooks, and when possible hem them, as the cloth will last twice as long.

In cleaning a closet always begin at the bottom, so as to avoid brushing dust from the top shelves on those below. Hang out in the air all clothing, and allow it to remain out of doors several hours if possible. Shake well and brush carefully each article before returning to its place.

Before beginning the actual cleaning provide yourself with one or more pairs of 10-cent gloves to slip on when doing dirty work. These gloves are invaluable and can easily be washed and mended.

Have all white curtains laundered before ready to put up. When the whole house is cleaned put up curtains and get out rugs and all fancy fixings. If these things are placed in each room as it is cleaned, they will be found in the way of furniture from other rooms, and will not look as well as when put in place at the last.

Dust brushes should be kept clean, wash with washing soda, rinse well and hang in the air to dry.

When a brush has worn off at the end, saw off the worn portion, and you have a mighty good stove brush. Don't think any cheap brush will do for a stove; it will not remove the dust and ashes.

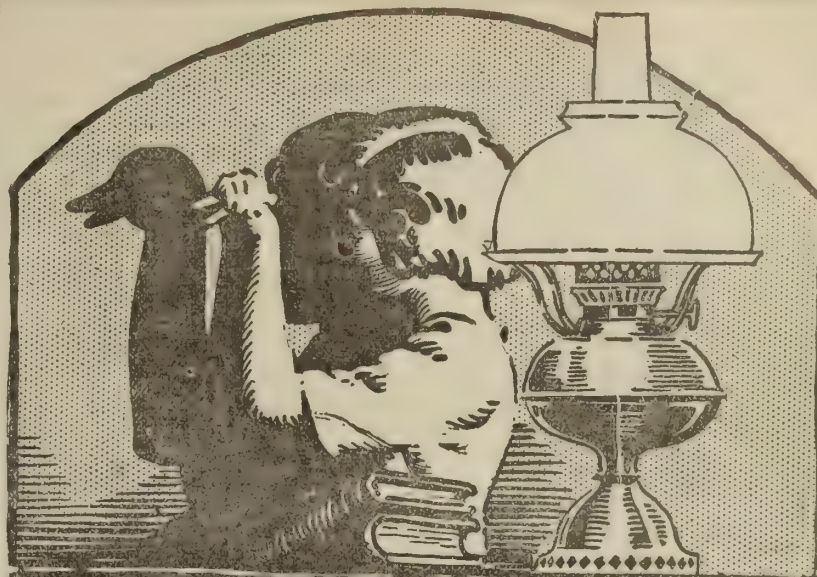
Have you an old-fashioned closet to whitewash? If so, put a handle on your brush. Cut five or six inches off of a broomstick, whittle two inches flat enough to fit perfectly on the whitewash brush, nail it secure with small nails, and you may keep the lime off your hands. Do not forget to put on a pair of the gloves already mentioned; those with gauntlets are best, because they protect the wrists.

Keep a pair of these gloves hanging by the kitchen stove (I sew loop on mine) and slip them on when fixing the fire, taking up ashes, etc. They save much washing of hands in cold weather.

Buy a yard or two of cheap outing flannel, cut into cloths of a yard each and hem. You'll have a floor cloth which is the comfort of your life; it is so easy to keep clean, and dries rapidly; wash it out each day and dry, and you will have it ready for the next day. This soft material absorbs water so thoroughly that paints and floors can be wiped very dry.

BRAIN FOOD

Keep preaching it, that every one horse farmer ought to take \$5 worth of papers, every two horse farmer \$10 worth, every three horse farmer \$15 worth. Southern farmers spend \$50-100,000 a year to fertilize their lands. If we'd spend about \$1,000,000 more a year to fertilize our brains, would profits likely be doubled? And have you ever noticed it that the man who is "too poor to take a paper" is not too poor to buy whisky to stunt what God-given brain he has. Half the money the south has spent for whisky would give a library and a perpetual newspaper subscription to every home in the south.—The Progressive Farmer.



THOSE LONG WINTER EVENINGS—YOU'LL NEED A RAYO

Because it's so big and solid and dependable. It sheds a warm generous glow to every corner of the room. And it's designed so simply and so well that it doesn't get out of order.

Easy to clean—lighted without removing the chimney. At all dealers.

For best results use Conoco Safety Oil.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)
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Rayo



Money to Loan On Farms

LIBERAL TERMS

If you need money for additional improvements to buy livestock or any other purpose let us help you.

Because of our long experience in the land business, we are prepared to give you the best service and portection.

Come and see us or write.

Kimball & Richards

"Land Merchants"

The firm that is known for the "liberal loan."

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ention Utah Farmer when you write.

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A handsome and highly perfect-
ed Player-Piano, the finest ever
offered at or near the price.

Burrland Player-Piano

With beautiful music cabinet and
20 rolls of music, DELIVERED
TO YOU FOR A FIRST PAY-
MENT OF.....\$10.00

Balance in easy monthly pay-
ments. Price of outfit ...\$466.00

The Burrland Player-Piano is entirely
above the class of other player instru-
ments advertised at low prices.

For price is not the first consideration
in this instrument. It is the highly per-
fected and finished product of the largest
manufacturers of musical instruments in
the world—the concern known everywhere
as the leader in fine player construction—
The Aeolian Company. So quality is the
first requirement in the Burrland Player—
quality worthy of the unqualified Aeolian
guarantee.

Its wonderful pneumatic system, be-
cause of many patented and exclusive
features, is unequaled in responsiveness,
musical capability and ease of operation.
A remarkable perfection is evident in
every part that is a factor in securing
musical excellence—for this Burrland
Player-Piano, remember, is the work of
the men who have made all of the world's
finest players.

The piano quality of the Burrland Player
is also very superior. The tone is rich,
smooth and big in volume. The action is
quick and well-balanced—delightfully sat-
isfactory to the person who plays by hand.
The tone experts who have made the
famous Weber and Steck Pianos such
magnificent instruments have given their
best skill to the Burrland Player-Piano
also, and have helped to make it one of
the greatest triumphs of the Aeolian or-
ganization.

WRITE US TODAY ABOUT OUR 15-DAY
FREE TRIAL OFFER.

Consolidated Music Co.,
Salt Lake City, Utah.

Gentlemen:

Send—free—catalogues and informa-
tion regarding your special offer on
Burrland Player-Pianos.

Name

Address

New upright Pianos from \$180 up. Good
used uprights at \$60-\$85-\$140 and up.
Easy terms. Write today.

Consolidated Music Co.

SALT LAKE CITY, UTAH.

"Where Your Grandfather Bought,"
"OUR FIFTY-FOURTH YEAR."

Live Stock

FIGHT CONTAGIOUS

ABORTION IN CATTLE

Just think of a loss of \$20,000,000
a year from a preventable, controllable
scourge like abortion in cattle.

The Bureau of Animal Industry of
the Department of Agriculture is at
work in a determined effort to de-
vise a method of treatment which
will be effective in controlling this
great scourge.

Are you doing your part? You
must help. It is impossible to reach
all infected herds, nor are there suf-
ficient funds available to provide in-
dividual attention. But it is the aim
to suggest methods for combating the
disease, and ways to protect your
herd and your district. But you your-
self must put these measures into
effect.

It is only by a united action that such
a widespread disease can be sup-
pressed. Abortion is fast becoming
the most destructive of all animal
diseases. It hits animal husbandry
at its very source. If the offspring
is killed, and the bovine species can
not reproduce its kind, we get neither
beef nor milk. The necessity is plain
for vigorous action to prevent such a
calamity.

Abortion is insidious. It creeps in
like a thief in the night, and it is not
always an easy thing to trace. New
animals, whether male or female, pur-
chased from an affected herd, or a cow
served by a neighbor's bull which has
become affected, or contact with
diseased animals in other ways, may
be the means of introducing the
disease. Take warning, therefore, and
protect your herd from this destruc-
tive disease.

Is your herd already affected? If
so, you have some work ahead of you.
But don't quit on that account. Abor-
tion has been and can be controlled
by thorough and intelligent treatment.
It is not a lazy man's job, but by care-
ful attention to details of sanitation
and hygiene and the control of breed-
ing the disease can be overcome.

Don't waste your energies on un-
profitable animals. Send the board-
ers to the butcher; then give your
attention to the good cows. "An
ounce of prevention is worth a
pound of cure." Clean up the stable,
put in windows and let the sunshine
in, then give a liberal coating of
whitewash, so that you can see if
there is any dirt. Drain the barn-
yard and make everything clean and
sanitary.

Clean and Disinfect Stable, etc.

Chemical disinfectants are used to
good advantage in controlling dis-
ease and the following directions for
their use are given:

1. Sweep ceilings, side walls, stall
partitions, floors, and other surfaces
until free from cobwebs and dust.

2. Remove all accumulations of
filth by scraping, and if woodwork has
become decayed, porous, or absorbent,
it should be removed, burned, and re-
placed with new material.

3. If floor is of earth, remove 4
inches from the surface, and in places
where it shows staining with urine a
sufficient depth should be removed to
expose fresh earth. All earth removed
should be replaced with earth from an
uncontaminated source, or a new
floor of concrete may be laid, which
is very durable and easily cleaned.

4. The entire interior of the stable,
especially the feeding troughs and

drains, as well as milking stools and

24 hours a Day



Is your working day measured by the endurance of
your horses or mules? Is it limited to daylight hours? If
it is, you are handicapped in doing your work on time,
efficiently—in doing it when it should be done, in the
way you want it done.

CATERPILLAR

Reg. U.S. Pat. Off.

at your command. Read what one owner of two Caterpillars says:

"There have been no repairs, consequently no delays. During
September we ran both engines 24 hours a day. The question
with us today is—how did we ever farm without a Caterpillar?"

Think what it means to own a tractor you know is able to stand
the gaff of long spells of day and night duty when necessary.

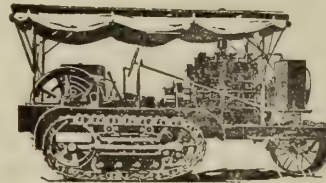
Only Holt design, Holt construction, Holt materials, Holt inspec-
tion, Holt service could make such results possible. For 35 years
the name "Holt" has stood for the things that mean satisfaction and
success for the buyers of Holt products.

Send for catalog IE 344. It tells you all about the advantages
of the Caterpillar—features not found on any other tractor—feat-
ures you will want to know about before buying a tractor. It shows
you the features that won for this tractor the highest awards at
both California expositions—that have earned for it the name of
"the world's greatest tractor."

The Holt Mfg. Company, Inc.

STOCKTON, CALIFORNIA

SAN FRANCISCO, CALIF. • LOS ANGELES, CALIF.
SPOKANE, WASH. • PORTLAND, ORE.



Cement Pipe Molds

FOR MAKING IRRIGATION DRAIN and SEWER PIPE



K. T. Pipe Molds are the outgrowth of
many years of experience in the success-
ful manufacture of cement pipe—the one
perfect water distributor—Efficient,
Economical, Everlasting, and not affected
by either heat or freezing.

These molds make it possible for you
to obtain cement pipe economically—no
matter where you may be located.

If you are interested in the subject of either Irrigation, Drain
or Sewer Pipe, write for our special Cement Pipe literature—it will
save you money.

KELLAR-THOMASON COMPANY

1230 East 28th Street., Los Angeles, Cal.

"Originators of the Valve System of Irrigation."

all other implements, should be
saturated with a disinfectant, as cresol
compound, or carbolic acid, 6 ounces
to every gallon of water in each case.
After this has dried, the stalls, walls,
and ceiling may be covered with
whitewash (lime wash), to each gal-
lon of which should be added 4 ounces
of chlorid of lime. The disinfectant,
of course, should be rinsed thoroughly
from drinking troughs before animals

again drink from them.

5. All refuse and material from
stable and barnyard should be re-
moved to a place not accessible to
cattle or hogs. The manure should
be spread on fields and turned under.
In addition, the yards should be dis-
infected by sprinkling liberally with
a solution of copper sulphate, 5
ounces to a gallon of water.

The best method of applying the dis-
infectant and the lime wash is by



Learn to Feed For Results

To aid owners of cows to more economically maintain them, and to show dairymen how they may help their milch cows yield more milk, of higher quality, is the object of our booklet — "Feeding for Results."

In addition we want you to know something about—



—the new stock feed—already popular among stock men who have tried it, and found that this well-balanced, highly nutritious stock feed does produce results. Send for your copy of "Feeding for Results"—it's FREE.



Utah Cereal Food Co.
Ogden, Utah

means of a strong spray pump, such as is used by orchardists.

This method is efficient in disinfection against most of the contagious and infectious diseases of animals, and should be applied immediately following any outbreak, and, as a matter of precaution, it may be used once or twice yearly.

Write to the Department of Agriculture, Washington D. C., for Farmers' Bulletin which gives details of the disease and its prevention and treatment.

If you know of any cases write to the Experiment Station, Logan, Utah, to the Bureau of Animal Industry Federal Building, Salt Lake City, Utah, and ask them, how they can help. This is important—now is the time to act.

THE COST OF A 225-POUND PIG

By John M. Evvard, Iowa Experiment Station.

The cost of producing a pig will vary, depending upon such factors as the season, the feeds used, system of management, the price of feeds, the methods of feeding, the breed, and others. Generally speaking, however, the cost under a definite set of conditions averages about the same one period of years as compared with another.

To take a pig from farrowing to 225 pounds in weight means that we feed him a couple of months with his dam; and then after weaning, the rest of the time with his mates.

Some figures covering both these periods of development are to the point. The sows fed were gilts. They were fed a ration of shelled corn, plus 50 per cent as much of a mixture of middlings 4 parts and meat meal tankage 1 part. Or, to put it more plainly: 50 per cent as much of the supplementary mixture was fed, as of corn, which was allowed according to appetite. The pigs were given both shelled corn and the supplement mixture in separate self-feeders arranged in a creep, they having all they wished at any time.

Seven of these gilts on alfalfa pasture suckling their spring litters started with 51 pigs and at the end of 60 days ended with 44, an average of 6.3 pigs saved to the sow. At weaning time these pigs averaged close to 30 pounds, counting the total gain per group, that is the gain on the gilts (which really was a loss) plus the gain on the pigs, we find that for every hundred pounds of gain made there was fed 240 pounds of corn, 97 pounds of middlings and 24 pounds of tankage. This charges the loss on the seven pigs that died, they dying early. In other words, it represents actually in practice how many pounds of feed it takes on alfalfa pasture to make a hundred pounds of gain on the swine. The pasture charges on each hundred pounds of gain made on the basis of a \$10.75 charge on the pasture was a little over 21 cents. On the basis of corn costing 50 cents; middlings, \$29 per ton; tankage, \$50 per ton, and pasture, as stated, the total cost of a hundred pounds gain was \$4.42. Inasmuch as these pigs weighed around 2 pounds at the beginning of the suckling period the total cost per pig weaned (not including the farrowing cost which really means the cost of carrying the sow through the pregnancy period) is \$1.24.

Now what is the record when the weaned pigs are placed on alfalfa pasture and allowed to hustle for themselves? The pigs were fed a 3

per cent shelled corn ration during the forage season, the alfalfa being splendid. Of meat meal tankage they received not quite 2 pounds daily on the average for the entire period. This meat meal tankage, however, was not fed while the alfalfa was exceptionally good; namely, from June to September. On November 5th, at the end of the pasture season, the pigs weighed 196 pounds; at which time they were put on self-feeders in dry lot, they received corn and meat meal tankage separately. Here they continued for 22 days until they reached the 225-pound mark.

The feed required for a hundred pounds gain was 389 pounds of shelled corn and 17 of meat meal tankage. Very little salt was consumed, or only .2 pounds for each hundred pounds of gain made. On the basis of feeds priced as above, the costs of grain and forage for a hundred pounds gain was practically \$4. To make these 30-pound pigs, therefore, at weaning time weigh 225 pounds they would necessarily have to gain 195 pounds, which, at \$4 per hundred, would necessitate a cost of \$7.80.

Add the suckling cost of \$1.24 to the after weaning cost of \$7.80 and we have a total feed cost of \$9.04 to produce a 225-pound pig after farrowing.

Some of our records show that on the basis of 50 cent corn, a new-born pig from gilts will cost approximately 40 cents. If seven are farrowed and six live this will make the cost of the pigs that live 53 cents. Add this to the \$9.04 and we have a total cost of \$9.57 to cover the feed cost of a 225-pound pig, or \$4.21 a hundred pounds when corn costs 50 cents; meat meal tankage, \$50; wheat middlings, \$29 a ton, and alfalfa pasture, \$10.75 an acre.

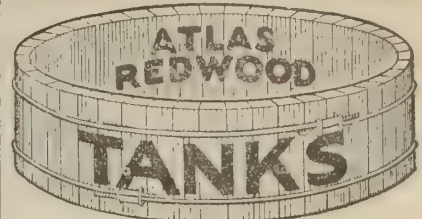
Had these sows and pigs been self-fed during these periods of the pig's development the cost would have been a little less than the above figures.

OATS AND PEAS FOR HAY

Answer to the Subscriber, Park City, Utah.

By Dr. W. E. Carroll.

Oats and peas have been successfully grown throughout different sections of this state and other Western states. Different mixtures of seeds



"The Tank that Lasts a Lifetime"
A FULL STOCK OF STORAGE
AND STOCK WATERING
TANKS CARRIED IN

STOCK BY
**GREEN MACHINERY &
MANUFACTURING CO.**

Machinery Merchants & Manufacturers
American Building, 338 South Main St.
SALT LAKE CITY, UTAH



PIANOS

and Player Pianos—World's
Best—Lowest Prices. Cata-
log FREE if you mention
this paper

Daynes-Beebe Music Co. SALT LAKE CITY

have been used successfully in various sections of the state. In some of the lower valleys one and one-half bushels of oats and one bushel of peas has given good satisfaction. It is possible that in the higher sections, equal parts of oats and peas should be used. From one bushel to one and one half bushels of each kind of seed can be used per acre, depending upon the particular kind of soil available. Canada field peas has been the most successful variety used. The seeds are thoroughly mixed and drilled in with an ordinary seed drill, the mixed seed being put immediately into the drill. When cut for hay both plants should be along about the same state of maturity, that is the oats should be coming into the dough stage and the peas should be fairly well podded out.

Mr. Bacon: "You should never judge a man by his clothes, my dear."

Mrs. Bacon: "I never do. I always judge him by his wife's clothes."

VISIT THE EAST AND YOUR OLD HOME TOWN "Home Visitors" Excursions

VIA SALT LAKE ROUTE

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Kansas City
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More Butter and Better Butter

YOUR HERD should average at least 500 lbs. of butter per year. A good Jersey herd will do even better—600 lbs. per year, and the butter will be of the finest flavor, texture, and color. There are many individuals of this breed producing 1100 lbs. They make good use of every ounce of feed, do not require fancy feeding, mature early, thrive in any climate, are steady producers, are beautiful and gentle. They pay big dividends on the highest priced land.

Our latest free book, "About Jersey Cattle," tells all about the development of this hardy breed. Send for it—now. You'll be glad you did.

American Jersey Cattle Club
387 West 23rd St., New York City

WANTED

Hay, Grain, Potatoes,
Alfalfa and Sweet
Clover Seeds.

Write us

Vogeler Seed Co.

Salt Lake City, Utah.

Utah-Idaho Sugar Will Make It Better

Utah-Idaho Sugar is as pure, as sweet, as white, as evenly and as finely granulated as any sugar in the world. Just the choicest sugar beets are used; nothing but skillful white labor is employed, and the most modern machinery is used in making this perfect sugar.

These are only a few reasons for Utah-Idaho Sugar's exceptional high quality.

Utah-Idaho Sugar will help you in your cooking, baking, canning, etc. Tell your grocer to send you a sack today. To make sure you get the sugar you want, ask for—

UTAH-IDAHO SUGAR
ABSOLUTELY PURE

POULTRY

THE POULTRY MITE

T. J. Talbert.

Everyone knows the gray poultry mite which takes on a distinct reddish cast after the meal of blood. It is commonest in dark, damp, dirty poultry houses where it thrives upon filth, the logical remedies are sunshine, ventilation, and cleanliness. The hen-house should be so constructed that it can easily be kept clean and that there will be no cracks or crevices in the roosts or elsewhere to furnish hiding places for the mite during the day time when they are not on the fowls. They feed at night, crawling from fowl to fowl, so that one infested bird may introduce them into the entire flock.

Sunshine is one of the best disinfectants as well as a great foe to the mite, and it should be given access to just as much of the hen-house as possible. Regular spraying with kerosene emulsion, strong tobacco solutions, or commercial stock dips will help greatly. Commercial lime sulphur and miscible oils put on the market in such form that they will mix readily with water for use in spraying orchards are also helpful in combating the mite.

One application is not enough and the spray should be repeated in about a week in order to kill the young which may have developed from the eggs laid about the roosts or in the filth before the first spraying. It should be applied with sufficient force to penetrate all cracks and crevices.

Kerosene emulsion properly prepared at home will give as good results as anything which can be purchased. Mr. Talbert gives the following directions for making it: "Dissolve half a pound of laundry soap, or a pound of lye soap, in a gallon of soft water; take the solution off the fire and add two gallons of kerosene before cooling. Mix them thoroughly by churning ten or fifteen minutes and use one part of the emulsion to eight or nine parts of water when ready to apply.

One part boiled lime sulphur made exactly as for orchard spraying may be mixed with eight parts of water, and the commercial stock dips may be used in accordance with printed directions usually furnished with them. Strong tea made by boiling tobacco stems in water gives good results, and whitewashing should not be neglected.

Spray pumps of many different sizes and types will give good results. Bucket pumps, knapsack sprayers, and automatic sprayers will be useful in the garden and orchard as well as in the hen-house, although a longer hose or extension rod will be needed in the orchard. A barrel pump or power sprayer may be used with good results if it is already on hand, but is more expensive than the average farm needs for hen-house work.

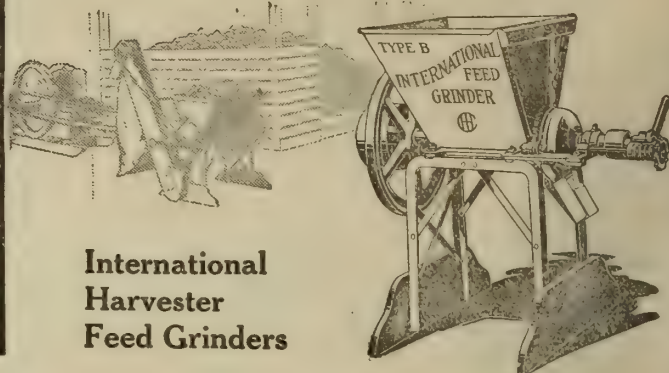
HAPPY DAY

"Twenty years ago was the happiest day of my life."

"That couldn't have been the date of your marriage: You're too young to have been married so long."

"No, it wasn't that. Just twenty years ago was the first time a barber asked me if I wanted a shave when I went in to get a haircut."—New York World.

You Need This Feed Grinder



International
Harvester
Feed Grinders

IF you are feeding stock, an International feed grinder will soon pay for itself. Whether you are buying ground feed, or feeding whole grain, using your own feed grinder will make a saving for you. In the one case it saves you the miller's profit for grinding, in the other it saves nearly, if not quite, one-fourth of the grain you feed. Besides, it saves all the cob meal, enables you to market steers and hogs in less time, gives you more milk from cows and more work from your horses for the cost of feed they get.

An International is the feed grinder you need, because, with three styles and seven sizes to choose from, all of the highest quality, you can get an International feed grinder of just the right type for your work. Type B grinds corn on the cob and small grain. Type C is for small grain only. Type D is a heavy grinder, used for corn in the husk, Kaffir corn in the head, and other heavy grinding.

Belt your International feed grinder to a kerosene Mogul or Titan engine, and you couldn't have a better or more economical outfit. Let us send you complete information about them. A post card from you will bring it promptly.

International Harvester Company of America
(INCORPORATED)

Crawford, Neb. Denver, Col. Helena, Mont. Portland, Ore.
San Francisco, Cal. Spokane, Wash. Salt Lake City, Utah

SPECIAL SALE OF BUGGIES



CLOSING OUT OUR STOCK OF

REX BUGGIES

We are selling these fine Buggies at prices much below their real value—if you want a Buggy here is an opportunity to buy one at a low price—Send for cuts and prices.

Utah Implement Vehicle Co.,

SALT LAKE
UTAH

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

Gem Herd of Improved Chester White Swine

This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions of the World's Fair held at Frisco this last year. Both Sire and Dam, is still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale at all times.

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GEO. H. LAWSHE
Falls City Idaho

THE MALE IS HALF THE FLOCK
White Leghorn cockerels from males with mothers laying 250 or more eggs a year—mated to females laying 200 and more. A few of these cockerels at \$5.00 each means less than half their value. Get yours now.

BATES & SONS
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Lumber cheap direct to you. Pacific Coast Sawmill Co., Portland, Oregon.

FOR SALE

One span of gentle black and brown geldings, 2½ years old. Also one registered Berkshire boar 3 years old.

FREDERICK G. WELLS
Delta Utah

BABY CHICKS

We are now booking orders for Spring Delivery in White Leghorns, Brown Leghorns, R. I. Reds, Barred Rocks and Black Minorcas. Anconas also.

THE ORLAND HATCHERY
Orland, Glenn Co., California.

UTAH HATCHED WHITE LEGHORN
BABY CHICKS \$11.00 PER 100

Circulars, order-blanks, etc., upon request. Candee Colony Brooders carried in stock.

GLENWOOD EGG FARM
R. D. 3 Murray, Utah

Barred or White Rocks, White Wyandottes, Layers, Winners. Choice cockerels, \$3.00 and \$5.00. Satisfaction or money back. 1733 Ranch, Box 117, Kearney, Neb.

I want to hear from someone that has a good Perchon stallion that they want to exchange for another good, blocky, heavy built fellow. Black in color, free from blemish and has proved O. K. Six years old and is registered.

A. LIGHTNER
Beaver County, Minersville, Utah

THIS YEAR IS THE YEAR TO BUY HOGS—

last year pork was away down—most every one got discouraged—marketed the majority of their hogs at a loss, and now the price of pork is up again. The best time to buy is when pigs are young. Write today.

RICHARDS LIVESTOCK CO.
Virginia Idaho
Jesse S. Richards Mgr.
(The West's best Durocs)

Wanted to hear from owner of good farm for sale. State cash price and description.—D. F. Bush, Minneapolis, Minn.

FOR SALE.

TWO CHOICE GUERNSEY BULL CALVES.

DR. R. A. PEARSE,
BRIGHAM, UTAH.

FOR SALE.

JERSEY BULL, "Bucky King," reg. 119533; 3 years old. Price very reasonable. A. O. Smoot, Provo. Reference. Bull at our farm at Springville.

WANTED—At a sacrifice, Sulky Plow, Spike Harrow and other Dry-Farm Implements. F. G. Hein, No. 2 Board of Trade Bldg., Salt Lake City, Utah.

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FAVORABLE TERMS
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We carry a large stock of the Best Vegetable Parchment Butter Wrappers and Especially Prepared Ink for Printing the same. We furnish them Postage Prepaid at the following Prices, money to accompany order.

100	\$.90
200	\$ 1.25
500	\$ 2.25
1000	\$ 3.00

Send all orders to

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Make Money
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Every farmer who has a woodlot can make money in his spare time sawing lumber with an "American" Portable Saw Mill. If he has no woodlot, he can do "custom-sawing" for his neighbors at big prices. An "American" mill will saw 2500 feet a day with 8 H.P. farm engine. Profit its mount fast. "American" Mills are designed especially for farm use. Easy to move and anyone can operate. Famous for quality for years. Get an "American" and start to make money.

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Stock of mills on hand.

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Salt Lake City, Utah

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When housewives use sugar that is made in the west, such as Table and Preserving Sugar, they are securing a product that is not only 100 per cent pure but which also contains 98 per cent of energy when consumed as food—a body builder, a strength builder and an energy builder.

YOU NEED THIS FOOD

Saving Money Is But Half of Success

Proper investment of that saved is of greater importance.

The boy has learned an important lesson when he has learned to save. Teach him the more important lesson of proper spending. Encourage him to invest his savings in a pure bred Berkshire. Encourage him to study methods of care for it. His success will surprise you.

Get a young one for \$12.50 before they are picked over.

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—but it wouldn't be a Reo!

Are you one of those who, just because you can't get a Reo on the minute, are thinking of accepting as a substitute a car that is your "second choice"?

Or are you one of those who think perhaps you can get as good value in some automobile of lesser reputation?

If you are in doubt on any point, let us just say this:

Take a Reo, and have it made in any other factory—and it wouldn't be a Reo.

It isn't design alone—there are no radical features of design in Reo cars.

Nor is it factory equipment—all automobile factories have about the same machines. Reo, being a leader, is always a few months ahead of most—but machine tools are practically standard.

Nor could one say that Reo mechanics are all more skilled—others can hire good mechanics too.

That's why we say that if you took Reo design and Reo specifications and had the car made up in some other plant, still it would not be a Reo.

It's the Reo spirit—that indefinable but still tangible thing that pervades the whole Reo organization from General Manager down to the Last Man in the Shops, that gives to this product the quality that has come to be known as Reo.

We like to call it good intent—for after all that is the determining factor.

It is the desire of the Reo Folk to make the best automobiles it is possible to make.

Not the most, but the best. Not quantity, but quality, is the Reo goal.

And every Reo man—from the Chief Engineer to the Final Inspector—is imbued with that spirit, is actuated by that desire to make good, dependable automobiles. Better than others.

Visit the Reo plant. You will be welcome—the doors are always open. Reo Folk, proud of their work, are glad to show you through. Note the atmosphere of the place. Watch the workers—listen to the remarks you'll hear.

No one asks—"How many did we make yesterday?" as you hear in so many factories nowadays.

For that isn't the thought uppermost in the minds of Reo workmen.

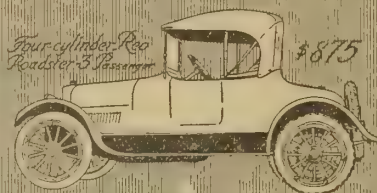
It's how many parts were discarded, turned back by the inspectors—because of some error so slight it would "pass" in most plants.

There's no secret—no necromancy—about Reo quality or how it gets into the product.

It's the result of that fervent desire of the Reo Folk to make Reo cars excel—and the eternal vigilance that results from that desire—that is responsible for Reo quality, Reo stability, Reo low cost of upkeep, and finally, Reo preference—Reo demand.

Is it any wonder that Reo cars are known as "The Gold Standard of Values"?

Reo Motor Car Company
Lansing, Michigan



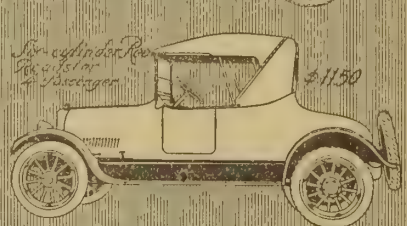
Four-cylinder Reo Roadster 3 Passenger \$875



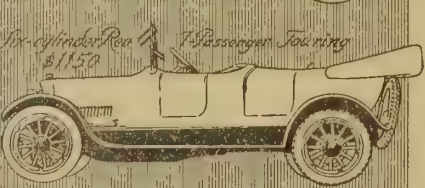
Reo Six Fifth Passenger Touring \$875



Four-cylinder Reo Enclosed Car \$1025



Four-cylinder Reo Roadster 2 Passenger \$1150



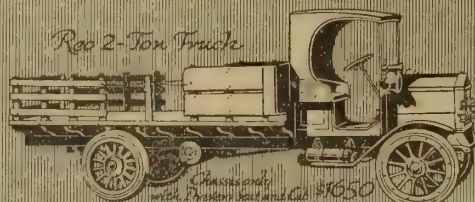
Six-cylinder Reo 7 Passenger Touring \$1150



Reo Six Sedan 7 Passenger \$1150



Reo 2-Ton Special Delivery \$1000



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GOLD STANDARD
OF VALUES"

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DEC 6 1916

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 17

LEHI AND SALT LAKE CITY, UTAH

NOVEMBER 25, 1916



How to Smoke Meats

Directions for Smoking Pickled and Cured Meats in the Farm.

Pickled and cured meats are smoked to aid in their preservation and to give flavor and palatability. The creosote formed by the combustion of the wood closes the pores to some extent, excluding the air, and is objectionable to insects.

House and Fuel.—The smokehouse should be 8 or 10 feet high to give the best results, and of a size suited to the amount of meat likely to be smoked, 6 by 8 feet being large enough for ordinary farm use. Ample ventilation should be provided to carry off the warm air in order to prevent overheating the meat. Small openings under the eaves or a chimney in the roof will be sufficient if arranged so as to be easily controlled. A fire pot outside of the house proper with a flue through which the smoke may be conducted to the meat chamber gives the best conditions for smoking. When this can not well be arranged a fire may be built on the floor of the house and the meat shielded by a sheet of metal. Where the meat can be hung 6 or 7 feet above the fire this precaution need not be taken. The construction should be such as to allow the smoke to pass up freely over the meat and out of the house, though rapid circulation is at the expense of fuel.

Brick or stone houses are best, though the first cost is greater than if they are built of lumber. Large dry-goods boxes and even barrels may be made to serve as smokehouses where only small amounts of meat are to be smoked. The care of meat in such substitutes is so much more difficult and the results so much less satisfactory that a permanent place should be provided if possible.

The best fuel for smoking meats is green hickory or maple wood smothered with sawdust of the same material. Hardwood of any kind is preferable to softwood. Resinous woods should never be used, as they are likely to impart bad flavors to the product. Corncocks are the best substitute for hardwood and may be used if desired. Softwood and corncocks give of large amounts of carbon in burning, and this is deposited on the meat, making it dark in color and rank flavored. Juniper berries and fragrant woods are sometimes added to the fire to flavor the meat.

Filling the House.—Meat that is to be smoked should be removed from the brine two or three days before being put in the smokehouse. If it has been cured in a strong brine, it will be best to soak the pieces in cold water overnight to prevent a crust of salt from forming on the outside when drained. Washing the meat in tepid water and scrubbing clean with a brush is a good practice. The pieces should then be hung up to drain for a day or two. When drained they may be hung in the house. All should be suspended below the ventilators and should hang so that no two pieces come in contact, as this would prevent uniform smoking.

Keeping up the Fire.—A slow fire may then be started, warming up the meat gradually. During the winter months in cold climates it is best to keep the fire going continually until the smoking is complete, holding the temperature at about the same point. If the fire is allowed to die down, the meat becomes cold and the smoke does not penetrate readily. This results in heavy smoke on the outside and very little on the inner portions



This is the kind of a road that lost a Kansas farmer \$1,800 by cutting him off from his market.



The Concrete Road enables the farmer to reach his market in any kind of weather.

A Soft Road Cost Peter Coughlin, of Concordia, Kas., \$1,800 in One Week

THE *Kansas Farmer* says: "John W. McCoy, Vice-President of William Volker Co., of Kansas City, recently made a speech in his old home town, Concordia, Kansas, in which he recounted the experience of Peter Coughlin, whose place was about three miles east of town. He said:

'As an excuse for talking good roads I remember an actual case. While employed at the B. & M. depot, the general live-stock agent at the request of a Chicago Commission Company, wired our office to have a feeder ship his cattle on a certain date. Under normal conditions, Mr. Ralston would have driven out and advised this man, but the roads were impassable for vehicles, and the message was taken on horseback. This feeder said it would be impossible to get the cattle to the station, as he had that morning been to town and knew the condition of the roads. When they could be traveled, the market had declined \$2.50 per 100. On this lot the farmer suffered a loss on the two cars of nearly \$1,800. No doubt a similar loss, or road tax, if you please, has been collected many times during the past 20 years and will be again frequently in the next 20.'

Conditions not half as bad as this on your roads may be costing you hundreds of dollars this year in lost market opportunities, in high haulage costs paid in worn-out horses, harness and wagons, and heavy tax for maintenance of impermanent roads.

A concrete road is permanent, and it is open the year round in every kind of weather. Its first cost is low, approximately \$15,000 per mile

for a 16-ft. road, and its annual maintenance averages but \$30.00 a mile for complete upkeep and repairs. In the end, the concrete road is the cheapest permanent road you can build. It will save you money in haulage and road taxes, and will increase the value of your property.

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FOR PERMANENCE**
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of the meat. During the spring months and in the summer a light fire may be started every second or third day for two weeks, the meat being allowed to hang in the smokehouse until sufficiently colored. When the fire is kept going steadily and an even temperature is maintained, 24 to 36 hours will be required to finish one lot of meat. Smoke will not penetrate frozen meat and it will be necessary to extract all frost from it before filling the house. The house should be kept dark at all times to prevent flies entering. As soon as smoked sufficiently the meat should be cooled by opening the ventilators or doors. When hard and firm it may be canvased or packed away for summer use.

AT THE END OF THE GOOD ROAD
To see what really happens at the

end of the good road, a public road specialist of the department recently had observations made in different sections of the country. The observers noted many country-bound teamsters who drove two loaded wagons, hitched one behind the other, to the end of the good road, and then found it necessary to leave one wagon by the roadside to be returned for later, while all the power of their teams was devoted to hauling a single wagon over the unimproved road.

Farmers bound for the market frequently were seen to haul wood and similar products to the beginning of the good road, there dumping them, and returning for a second load. When this arrived, the two loads were consolidated and easily hauled by a single team the remaining distance to market over the improved highway.

In one section of the country where oxen are still used teamsters were observed to bring their loads over the dirt roads with two or three yokes of oxen. When the beginning of the good roads was reached, the teamster would unhitch the extra animals and finish their journey with a single yoke.

SEED CORN SCARCE—SAVE.

Good seed corn will probably be scarce next spring. Late varieties have not matured, medium varieties matured but little, and early varieties only some good seed. All the ears are full of moisture and should be dried out at once on racks, hung warm, well-ventilated places where they do not touch each other. Corn will stand 130 degrees F. for a few days, if in a well-ventilated room.

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VOLUME XIII. LEHI, UTAH, SATURDAY, NOVEMBER 25, 1916 No. 17

Thanksgiving Day

Mary Johnson.

"With flocks the pastures clothed be;
The vales with corn or filled;
And now they shout and sing to Thee;
For thou hast made them glad."

Thus sang the psalmist hundred of years ago.

Or all the religious festivals of the year Thanksgiving is about the only one in which all people can take part. Whatever his belief he can call on God and praise Jesus, Mohmm or Buddha.

Probably the first Thanksgiving service in America was that held on May 27, 1578, by the members of the expedition under Forbisher, on the shores of Newfoundland. This was conducted by an English minister named Wolfall, who preached a Thanksgiving sermon.

The first record of a Thanksgiving service within the limits of the present United States was that held by the members of the Popham Colony, who settled on the coast of Maine in August, 1607. According to some authorities a Thanksgiving service was held by the Pilgrims as early as December, 1620, soon after the landing of the Mayflower.

Those, however, were merely Thanksgiving services and the origin of a day of thanksgiving such as we now celebrate must be attributed to Governor Bradford of Plymouth. In November, 1620, the Pilgrims landed on the desolate coast of New England and passed the following winter with great suffering and privation. In the spring seed was sown and its growth was watched with great anxiety, for on the result depended the lives of the colonists. When the grain was put and the harvest was found to be abundant there was great rejoicing, and the Governor proclaimed a day of thanksgiving. He sent out four men in search of game, and they soon returned with a large number of wild fowl, most of which were turkeys. It is doubtless due to this incident that the turkey has always been considered a necessary feature of Thanksgiving feasts.

They were a devout lot, those Pilgrim Fathers, and they did what we do this day and age sometimes forget to do—they gave God credit for his part in making crops, for the sunshine and the showers and the seasonable weather.

So when the crops were harvested they gathered together and held a harvest festival, or harvest thanksgiving as they called it. They continued to do so, year after year, for regardless of the size of the crop, there is always much for which we ought to thank God. There are always many reasons for setting aside one day in the year for giving thanks.

During the revolutionary war con-

gress passed a resolution every year establishing a legal holiday for thanksgiving. General Washington by proclamation created a Thanksgiving day in 1789. The custom has been continued ever since.

It is as sweet a custom as we have. It has grown into a sort of homecoming day—a day when the boys who have gone to the city to make their home, return to the old place to take dinner with mother, and to once more sit and listen to father tell of the struggles they have had upon the farm.

Mother and father enjoy having the boys at home again, of course. But great as is their joy, they can not know the consolation that comes to the boys, the satisfaction that they feel, to come home again and enjoy the pleasure of being with father and mother.

It is not necessary to elaborate in the least upon our present blessings, as contrasted with existing horrors across the sea. In all the years that have elapsed since July 4, 1776, the Republic has had no such occasion for the expression of profound gratitude to an over-ruling Providence as at the present hour.

This year President Wilson has proclaimed Thursday, November 30th, as Thanksgiving Day. With the usual proclamation comes the question, "Why are we thankful?" While the thinking citizens of the United States are deeply grieved and shocked over the great and wanton slaughter of human life by the belligerent nations, they are also strongly impressed with the fact that this very slaughter and the accompanying reckless waste and expenditure of money furnishes the principal reason for much thanksgiving on our part as a nation and people.

We have many reasons why we should celebrate this day. Health, friends, home, food and clothes, a prosperous, peaceful country, and a score of other things.

For the earth and all its beauty,
The sky and all its light;
For the dim and soothing shadows,
That rest the dazzled sight;

For unfading fields and prairies,
Where sense in vain has trod;
For the world's exhaustless beauty,
I thank thee, O my God;

GETTING IT FREE

Pat went to a druggist to get an empty bottle. Selecting one that answered his purpose, he asked:

"How much?"

"Well," said the clerk, "if you want the empty bottle it'll be one cent, but if you have something in it we won't charge anything for the bottle."

"Sure, that's fair enough," observed Pat, "put in a cork."

Farm Machinery

Albert Parker.

I have read with interest, and profit, by some of the articles that have appeared in the Utan Farmer on the care of machinery. They have taught me to take better care of my tools and machinery. I have given some thought to this subject of late and want to give you some of my ideas with the hope that they will be helpful to others.

The greatest help that has come to the farmer is modern machinery. We differ from the foreign farmer, most, because of our extensive use of modern labor-saving machinery. The development of farm machinery has added greatly to the productivity of the soil. How could we farm the big tract we do today, if it were not for the farm machinery which has been invented and manufactured for our use in tilling the soil? Suppose you take away the gang plow, the mower, the manure spreader, the harvesters of all kinds, the tractors, and the hundred other mechanical helps for the farmer, which do away with man labor, and how could we continue to produce our present out-put of farm products.

Right today the scarcity of good farm help at a fair wage is a problem many have to meet. Modern machinery makes possible extensive farming.

A constant study is necessary in order to become efficient. To find a machine which will do the work more quickly and more cheaply.

Every farmer should study now, how he can achieve greater results from his farm the coming year. It may be that you need certain implements that would help you to accomplish greater results. You can afford to buy any machine that helps to extend your energy.

The importance of using and studying improved farm machinery should be impressed strongly upon everyone interested in any phase of agriculture. We should emphasize the fact that the tremendous advance we have made in farming in the past twenty-five years is due, to a large extent, to the use of good implements; that the enormous crops of wheat, for example, are possible only because we have good machines in large enough numbers with which to cut them, and that the world's supply of bread depends upon the use of the modern reaper and binder. Who would attempt to produce a crop of grain without efficient plows and binders with which to prepare the land and harvest the ripened grain? Who would plant a field of beets if he thought he would be required to handle it with the machinery and methods of even ten years ago?

We should educate ourselves as to what constitutes a good machine, and use extreme care in the selection of it.

A study of farm machines should include the following: Materials of construction, design and type, means for adjustment and taking up wear, accessibility of parts, durability, adaptability to the work in hand, and cost. The dealer in farm implements should study the goods he sells with these points in mind just as much as the farmer should study the machines he buys with the same things in mind.

We should remember that mechanical power is cheaper than muscular power, first, because it is more efficient, and again, because it is more rapid, and can be crowded to its full capacity continuously.

On the average farm there is not an extravagant use of farm machinery, nor are there more machines and implements in their varied purposes for helping in the farm work than are needed. There is no saving in trying to skimp along with old, wornout machinery, or in borrowing machinery that is needed in the general crop work on the farm.

There is great extravagance on some farms in buying more machinery than is needed, and still more extravagance in the abuse of machinery by letting it stand out in the weather all year. It was never intended that a farm machine of any kind was to be left out in the barnyard and suffer the abuse of all kinds of weather. There is no farmer than can afford to handle his tools and machines in this way, not even the every-day farm wagon. The machine shed is just as important as a money-saver on the farm as the stable and barn.

It is an easy matter to spend a thousand dollars in machinery. It seems a much harder job to take care of it. If proper care is given, it will last in many cases three times as long.

I always investigate all the new mahinery that comes into the market. I watch my farm papers for new ideas and new machinery. If a manufacturer can convince me that the new machine will save me labor and expense of help, I buy it and do away with any old machines that would be a duplicate of the new one.

I believe that many of my farmer friends do not study new machines as they should. How many send for catalogues to the various implement houses and manufacturers? Don't be afraid to learn, ask questions and profit by modern labor-saving machinery.

Farm machinery is one of the greatest helps that has come to the farmer. Use it to increase your farm product. Take care of it and make a profit from your investment.

Angry Diner: "Waiter, you are not fit to serve a pig!"

Waiter: "I'm doing my best, sir."

Dairying

WHY A SILO?

Wm. Olsen.

Some one has likened the difference between silage and dry feed to that between juicy, ripe apple and the green, dry fruit. Because of its succulence, silage has a beneficial effect on the digestion of animals and practically every class of live-stock soon becomes very fond of it.

The economy of storing crops for silage is a feature which appeals at once to the average farmer since 2½ to 3 tons of silage can be stored in from one-half to two-thirds the space occupied by a ton of ordinary hay. More cattle can be kept on a given amount of land where silage is fed, and there is the additional advantage that after the crop is in the silo, the farmer is not dependent to any extent whatever upon weather conditions. Cold may come, pastures may dry up—the silo contains a supply of juicy, green, succulent food that is good winter or summer and equally as good for the periods in between.

Silage keeps young stock thrifty and in growing condition all winter. It produces beef fat more cheaply than does dry feed. Cows fed silage will produce milk and butter at lower cost. The silo prevents waste of cornstalks which contain about one-third the food value of the entire corn crop.

Silage is kept in the silo very much as fruit, vegetables and other articles

for human consumption are preserved in airtight cans. The germs which cause fermentation can grow only when supplied with oxygen and if air is kept from the silage, it can be preserved for an indefinite period. As soon as the silo is filled, fermentation begins, continuing until the supply of oxygen is exhausted. If the silage is well packed and the crop neither too green nor too ripe, fermentation will continue for but a short time and will be practically uniform below the top coating. The sweetness of the food depends upon the stage to which fermentation progresses and the subsequent exclusion of air. The best silage can be made only in practically airtight silo.

Some day history will give full credit to the progress which the 19th century may well claim responsibility; and the modern silo was a product of the 19th century. The 20th century has given it full appreciation. It is recognized as a true conservator of resources. Wherever the silo has been used it has made possible the keeping of more cattle on the same farm and has kept herds in better health and been responsible for increased milk production. The silo has well been named a watchtower of prosperity. The concrete silo being permanent will stand indefinitely as a monument to every progressive farmer who was far-sighted enough to build of that material.

IMPROVE FARM BUTTER

Better methods of handling milk and cream will insure superior product.

The adoption of more careful methods of handling milk and cream and improved practices in the making of farm butter will reduce rather than increase the trouble incident to home production of this food, say dairy specialists of the department, and will result in a superior product which can be sold more easily and for a better price than the average farm butter. Last year about 30,000,000 pounds of butter, much of which originated on the farm, was washed or renovated because it was of such poor quality that it could not be profitably offered on the regular butter markets.

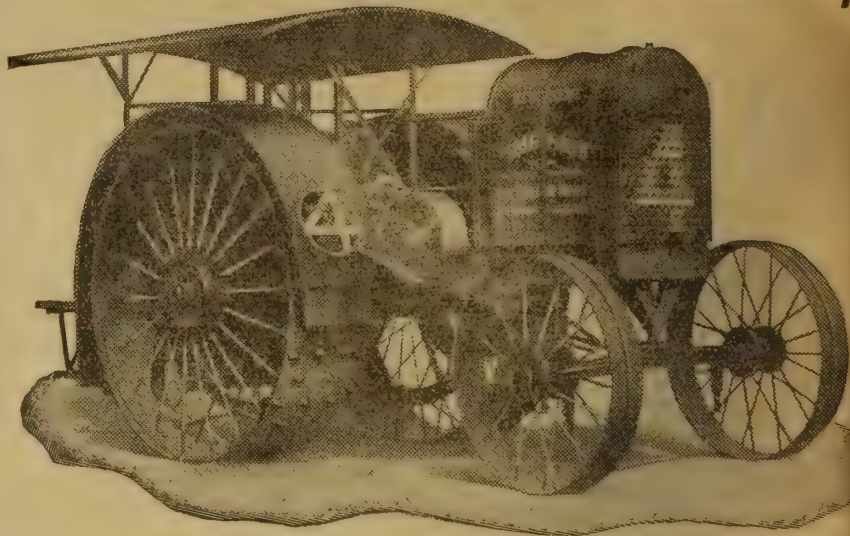
Churn Cream Only.

Cream alone should be churned. It may be skimmed as soon as it rises or may be separated by a mechanical separator. The latter plan is the more efficient, and though requiring a considerable initial outlay often will be profitable. The cream should be set aside in a clean place by separate milkings. A temperature of 50 degrees F. or lower should be maintained until from 12 to 18 hours before churning time, when the various batches should be stirred together well and brought to a temperature of about 70 degrees F. by placing the container in a bucket of warm water. One of the first acts of the farm housewife who decides to adopt improved methods should be to purchase a dairy thermometer. Temperatures play an important part in the development of flavors in butter, and always should be determined with fair accuracy. After the cream is mixed it should be kept at approximately 70 degrees F. until just before churning time, when it should be reduced to about 58 degrees F., where this is possible (or to such temperature not above 65 degrees F. as to comply to the operation of churning within 25 or 30 minutes).

Churning.

The barrel type has been found by dairy specialists to be one of the most

The Big Four "30" Tractor



Light Weight—Four Cylinders—Three Speeds

THE Big Four "30" is used for plowing, harrowing, seeding, harvesting, hauling and road grading. It provides an ideal power for threshing and all kinds of belt work. The Big Four "30" is so designed that it carries a large proportion of its weight directly over the rear axle.

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We will be pleased to send full information on the Big Four "30" to anyone interested.

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satisfactory churns. The dasher or plunger type requires a somewhat greater expenditure of labor. Earthenware churns are especially undesirable unless perfectly glazed, since if pores are exposed they absorb milk and cream which later decay. Churns with mechanical devices inside them are difficult to clean and sometimes injure the body of the butter.

The churn should be scalded preparatory to churning, but should be cooled with water before the cream is placed inside. The cream should be poured in through a coarse strainer. Every few minutes during the early part of the churning gas should be allowed to escape from the churn. If the temperature is right the churning should require about 25 or 30 minutes. The process is completed when the granules of butter are about the size of large wheat kernels. The butter-milk should then be drained off and the butter granules repeatedly washed with cold water while still in the churn. The washings should be continued until all milk is removed. Under no circumstances should working be depended on to remove surplus milk.

Working and Packing.

When the butter is free from all milk it should be taken from the churn with a paddle and placed on a worker. The hands should never touch the butter, both on account of sanitary reasons and because the body warmth may melt the fat. The working should be done carefully to

TAKE THE TIME

Investigate this exceptional buy now.

This section is and will in the future be the banner farming section of the State. It will pay you to look it over.

50 acres of very fertile land at Elberta, Utah. Raises all crops successfully.

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void making the butter greasy. Before the butter is worked, fine salt should be added to the rate of about one ounce per pound of fat.

The butter should be prepared for market in a rectangular mold, since, when in this shape, the product is more easily wrapped and handled and is more pleasing to customers. Regular parchment butter-wrapping paper should be used around the prints, as ordinary waxed paper tears easily and sticks to the butter. The placing of the wrapped prints in paste-board boxes is a desirable final step, as it protects the package, gives it a better appearance, and permits the use of the maker's name or trademark as an advertisement.

After the butter-making operations are completed the churn should be used carefully with warm water. It should then be scrubbed with hot water, cleansing powder, and a fiber brush, and finally should be scalded and set in a clean, sunny place to drain and dry.

WHY MILK SOURS

It doesn't. But the warm, damp weather just before a storm causes the milk to sour faster than it otherwise would. It hastens the growth of the bacteria in the milk that sour it.

If it were possible to keep all bacteria out of milk it would keep sweet, during thunder storms and in the hottest weather, but that is impossible. They are tiny things—little plants really—which can only be seen with a powerful microscope. A great number of them are carried into the milk with every speck of dirt. There may be millions in the seam of a pail that is not kept strictly clean. And they grow and multiply almost with lightning speed, if conditions are right—that is if the milk is warm. The result is that the milk is soon sour.

In order to keep milk from souring quickly two things are needed—cleanliness and coolness. Cleanliness of the cow's udders, the milk utensils and everything the milk comes in contact with. All dirt or dust that gets into milk carry the bacteria that will sour it. The less dirt and dust, the longer it will stay sweet.

It is equally important that the milk be cooled quickly, and be kept cool. In order to hinder the growth of the bacteria that get into it, since there are always some under the best conditions of cleanliness. Coolness really checks the growth of the bacteria, just as a cold spring checks the growth of corn, for bacteria are like plants, and require warmth and moisture to grow fast just as any other plants do.

CARE OF THE HERD BULL

It is a well known and very true thing that "the sire is half the herd," and this important "half" seldom receives the attention he deserves.

From birth, the bull should be given the best of care and feed in order that he may make the maximum growth and development. He should receive plenty of skim-milk and grain and be treated as well if not even better than the heifer calves.

At the age of five to six months he should be separated from the other calves. From this time on he must receive regular exercise and must be properly handled. When he is 10 to 12 months of age he may be given light exercise—possibly one cow every 3 or 4 weeks. From the age of 12 to 16 months this service may be increased to one cow per week.

A satisfactory feed for a mature bull

is alfalfa or clover hay and a grain mixture of corn, with oats or bran. A bull must have plenty of exercise. He does not need to be housed in a warm barn but is kept in the best condition when given a dry but open shed with a paddock attached so that he can go in or out at will.

Every mature bull should have a ring in his nose. There is some difference in opinion in regard to de-horning but it is always safer to handle a bull without horns.

Following are a few DON'TS which can be followed to advantage in handling a bull:

Don't underfeed him when young or keep him overfat when mature.

Don't use him too heavily before he is mature.

Don't abuse him. You can get better results by gentle but firm handling.

Don't tease him or allow children to play with him.

Don't let him get the upper hand at any time.

Don't let him realize his enormous strength.

Don't keep him confined. Give him plenty of exercise.

Don't trust ANY bull at ANY time. It is the "gentle" bull that does the damage.—W. W. Swett.

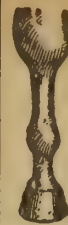
THE COWBOY'S PRODIGAL

A Texas preacher talked to a cowboy audience about the prodigal son. He described in detail the foolish boy's extravagance and dissipation; his penury and his husk-eating with the swine; he told of his return, his father's loving welcome, and the preparation of the fatted calf.

The preacher in his discourse noticed a cowboy staring at him very hard. He thought he had made a convert, and addressing the cowboy personally he said from the pulpit: "My dear friend, what would you have done if you had had a son returning home like that?"

"Me?" said the cowboy promptly and fiercely, "I'd have shot the boy and raised the calf."—Exchange.

Send for Butter Wrappers today.



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Reduces Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from Bruises or Strains; stops Spavin Lameness, allays pain. Does not blister, remove the hair or lay up the horse. \$2.00 a bottle at druggists or delivered. Book 1 M free.

ABSORBINE, JR., for mankind—an antiseptic liniment for bruises, cuts, wounds, strains, painful, swollen veins or glands. It heals and soothes. \$1.00 a bottle at druggists or postpaid. Will tell you more if you write. Made in the U. S. A. by W. F. YOUNG, P.D.F., 142 Temple St., Springfield, Mass.

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In Buying Land You Should Consider Its Location and The Quality of Its Soil

RICHLAND ACRES is a farm subdivision of 3000 acres situated on the floor of Cache Valley three to five miles from Logan, Utah.

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Tile drained, silt loam soil one to five feet deep.

Every element requisite for plant food, according to actual analyses.

Land adapted for sugar beets, alfalfa and garden truck in particular.

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RICHLAND ACRES IS BEING SOLD ON EASY TERMS AT \$100.00 TO \$200.00 PER ACRE—ONE FOURTH CASH—THE BALANCE IN TEN ANNUAL INSTALLMENTS, BEARING 6% ON DEFERRED PAYMENTS.

Logan Land and Drainage Company

A. F. CARDON, Manager.

LOGAN

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Logan, Utah.

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I am interested in beet land
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Change in Address—When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the address cannot be changed. This is a matter of importance to you and to us.

OFFICIAL ORGAN

Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers Association.

OUR GUARANTEE

We guarantee every subscriber against loss thru dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent upon application.

THANKSGIVING DAY.

Next Thursday, November 30th, has been proclaimed by President Wilson as Thanksgiving Day.

As a people, a state and a nation we have been greatly blessed during the past year. We certainly should celebrate the day with a sincere gratitude to our God for his many blessings.

One of the greatest blessings lies in the fact that we are not taking part in the great war across the seas.

We are blessed with good crops and able to sell our products at a fair price. It may be that there are some partial failures but they are so very few as compared to the number who have a bounteous harvest.

We are thankful for the blessing of the past year.

WHERE DO OUR TAXES GO.

We have asked several officials of the State to give us a report of "where our taxes go." They have promised to do it. We want our readers to know what is done with the tax money and we hope to give you in our coming issues some articles that will give details how your money is spent. We should have some of this information for next week.

ALWAYS GIVE YOUR NAME AND ADDRESS

We have several letters in our office we can not answer because no name is signed to them. We do not know whom to write.

A letter this morning from Goshen signed, "a

subscriber," asks for information which we can and will gladly give but we do not know whom to write.

We want to encourage every one of our readers to ask questions, always sign your name and if you do not want your name published just say so and we will gladly comply with your request.

In sending in your name for a change of address, always give old address as well as new one, this will help us to serve you more promptly.

PRICES GOING UP.

Some one said the other day that an article he was buying had gone up twenty per cent. We do not know what that same man would think if he had to pay the paper bills of the Utah Farmer. We are today paying more than double, nearly three times more for paper today than we were a year ago, and more than that we are not getting as good a part as we did a year ago. For more than six months we have been expecting, and had promised to us, some paper which we bought when prices had only increased about 100 per cent. We hope to have it soon. The question is where are we going to get off at if prices on every thing continue to advance.

RED TAPE COSTS MONEY

In a number of states it is only a matter of a few minutes to transfer a farm from buyer to seller, when deal has been made, and the transaction brought to the county registrar.

Nothing like that in our State today. When a deal is made, then an abstract must be made and if available brought up-to-date, an attorney passes his opinion on it. All this cost money this red tape of lawyers' and abstractors' fees. It may be as low as five or ten dollars but generally it is twenty-five dollars or more—but why pay all of this money out when it is not necessary. Some authorities say that from five to ten millions is spent each year in this needless expense of transferring property.

This new plan, which makes possible the quick, safe, and sane changing of land ownership, is known as the Torrens system of keeping the record of land titles. All that is required under the Torrens system is for the owner of land to take his abstract to the registrar of titles of the county. If the deed is found good a certificate of title is issued by the registrar. There is no going back of his certificate.

Of course we would expect strong opposition to come from lawyers and abstractors to this Torrens system, but it has proved its value and practical use in many states and other countries. Red tape costs money. Let's cut as much of it out as possible and help the high cost of living.

NOW FOR AN AGRICULTURAL

COMMISSIONER.

The coming legislature will have a chance to make good one of its pledges or platform promises by doing away with a number of commissions and boards and in their place create a new agricultural department with a commission or secretary at the head, with efficient men in charge of each department.

The Utah Farmer does not want to see any radical legislation put on our books that has not been tried out or proved worth while in other states. We do think, however, that our State should adopt some modern method to improve our agricultural development. What Utah should do now is to take advantage of the experience of a number of other states and enact some laws

that will be efficient and reduce the taxes of the people of the State.

Our state government should be organized and run with just as much economy and efficiency as any successful private business. Every officer should be required to give a service for salary paid. People today are not so much against a good salary, but they want and should get expert service when a high salary is paid.

Considerable data has already been gathered and the laws of other states secured with the opinions of government and state officials, as to their success or failure. We understand a committee will be appointed to consider this subject and make some recommendation to the Governor-Elect and the Legislature.

We would like to hear from any of our readers who are interested in this important subject. If it means anything, it means everything to the farmers of the State, so we suggest they get busy and take the matter up with their legislators and see that something is done at the coming session.

A GOOD PURE-BRED SIRE

THE KIND TO BUY.

A law that should mean much to our live-stock men goes into force the first of the coming year. Pure-bred bulls must be purchased and we want to again emphasize the importance of a good pure-bred sire. You can not save money by buying a cheap scrub sire.

A sheep man was telling me his experience this week. He said that he always paid a good price for his rams, while his neighbor only paid about one-third the price. To make his story more plain to me, he used these figures, while not the value or price that was paid, they will serve to illustrate the story and show the value of a good sire. For each thousand head of sheep he usually bought twenty head of rams paying \$15.00 each, his neighbor paid only about \$5.00 each, or a difference between \$300.00 and \$1,000.00 in cost of the rams.

In the spring they had about 800 lambs and the man who paid the higher price for rams, sold his lambs for \$1.50 to \$2.50 per head more than his neighbor. A difference of \$1,200.00 at the very least, better than the other fellow. It was easy to make up the difference of \$200.00 in the first cost and have a thousand left. And, yet some people wonder how it is that one man is making money and his neighbor with like advantage is not prospering.

Here is another story, and it will help to show the value of using only pure-bred bulls. The facts were gathered and given out by the Illinois Agricultural College.

"On 124 dairy farms where pure-bred bulls were kept at the head of the dairy herd, the average farm income was \$1,102 after deducting the taxes, interest on investment, etc.

"On 466 dairy farms where a grade bull stood at the head of the herd, the farm income was found to be \$734 per year, and on 83 farms where scrub bulls were used the farm income was \$243, or failed by \$243 to pay interest on the investment, to say nothing about pay for the owner's time."

"Compare those figures: One hundred and twenty-four dairy farmers using pure-bred bulls and 466 farmers who call themselves dairymen using grade bulls. That shows what a large proportion of dairy farmers have not yet learned the first principles of sound dairy cow breeding and so it goes."

A GRAFONOLA on 5 Days' FREE TRIAL

(This offer **LIMITED**—don't delay—act at once)

Due to Colonel Daynes' liberality and his desire to see one of these wonderful GRAFONOLAS in every home in the West—he is making this unusual offer—an offer that makes it possible for the home with even the most modest income to own one. If you have not heard one of these beautiful GRAFONOLAS you have the greatest surprise of your life awaiting you when one is placed in your home. Don't fail to take advantage of this offer while it lasts and at least TRY one of these GRAFONOLAS in your home.

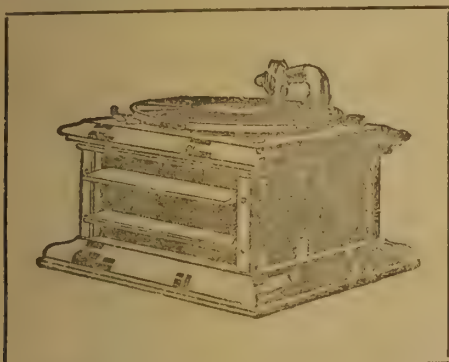
FREE TRIAL!

We offer to send you this brand-new GRAFONOLA on absolutely FREE TRIAL. Simply take it from the express office when it arrives—place it right in your home and use it five days. If you aren't pleased and delighted with it—and if you don't want to keep it, return it to us by first freight. We leave the decision to you. If you are pleased send us a small payment as stated below and small monthly payments thereafter.

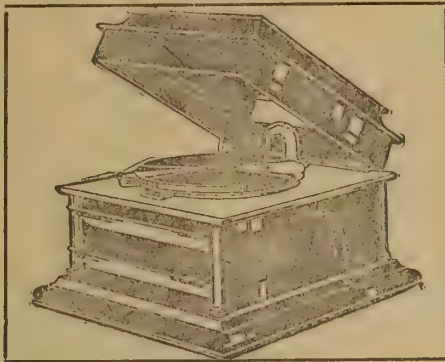
The only stipulation we make is that it is up to you to take the instrument PROMPTLY from the express office and that you notify us immediately of the opinion you form after the FREE trial time is up. Of course we want only people who can AFFORD to keep the GRAFONOLA to send for it. We feel quite sure that YOU will want to keep the GRAFONOLA after you have tried it—for in all our years of selling the COLUMBIA GRAFONOLA we have yet to find one dissatisfied owner. Surely that's a record to be proud of.

SEND NO MONEY!

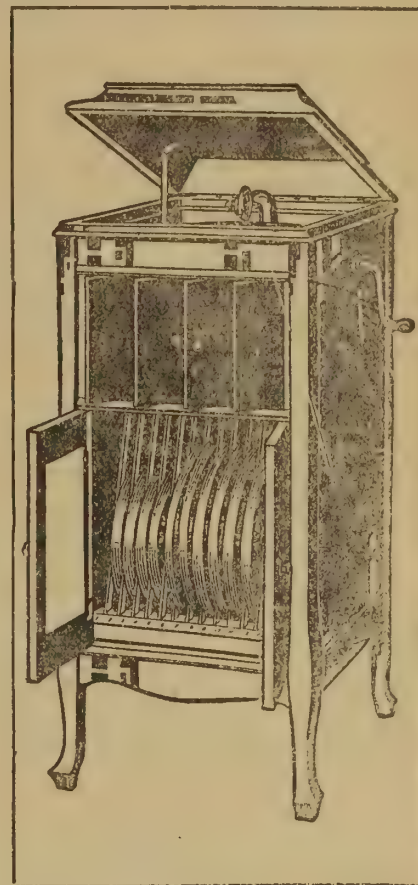
We don't require any money with your order, or C. O. D. payment. You pay us nothing till you decide to keep the instrument. You are under no obligation to keep it UNLESS YOU ARE SATISFIED. The only condition is that we ask you to take it promptly from the express office when it arrives, paying the net transportation charges, which are refunded if the outfit is not satisfactory. Of course, only those people who are willing to pay the easy terms if the instrument is satisfactory are supposed to have the FREE trial. Remember, if you're not wholly satisfied there's no obligation to keep the instrument. You and you alone are to be the judge.



PRICE \$32.50
Including 20 selections. (10 records—
music both sides).



PRICE \$57.50
Including 20 selections. (10 records—
music both sides).



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Including 20 selections. (10 records—
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JOSEPH J. DAYNES JR. PROPRIETOR
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ESTABLISHED 1890
"OLDER THAN THE STATE OF UTAH."



DAYNES-BEEBE MUSIC CO.

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GENTLEMEN:—Please mail me full particulars of your FREE TRIAL offer, and illustrations of Grafonolas (in colors) showing prices and EASY TERMS. This does not obligate me.

NAME

ADDRESS.....

Camera On Farm

E. K. Emslie.

A camera is a valuable asset to a farmer. Photographs are a means of giving accurate live-stock and other records, and are invaluable when used for advertising purposes. The farmer who raises live-stock will find that the camera may be used to serve several purposes. The camera may be made to play an important part in the social life of the farm. Visitors are always interested in looking at good photographs, and there is none who does not actually enjoy being "snapped." Although most of the small cameras do good work, a high priced one is desirable if one can afford to pay the price. It is usually considered a wise plan, however, to start with a small lens because an expensive one requires more accurate manipulation and greater care.

"The roll film camera seems to be a favorite because it is compact and easy to use. It requires no dark room for loading or for developing the films.

Exposure is Biggest Point

"Of the whole photographic process the exposure is most important. Best results are obtained through the tank method of developing. In this method the only causes of failure are carelessness as to the directions given and impure water. Boiled and cooled cistern water is best to use. Ordinary well water is usually pure enough to use for developing.

"There are two ways to determine the length of exposure. Guessing will lead, through practice, to fairly correct exposure. Then there are a number of calculators on the market for determining exposure. In one case the operator guesses the strength of the light and calculates from his guesses; in another type, a colored

glass prism is manipulated to allow the view to assume a certain appearance.

"A third method—which probably is the best—depends upon the action of the light on a sensitized piece of paper. Since this gives the actual photographic value of light the exposure can be made with a fair degree of accuracy. Any one using this actinometer for determining exposure and the tank method of development will have a fair degree of success. There is a single lens that is used in the cheaper grades of cameras. The anastigmatic lens is corrected as to the various defects that are found in the other lenses. It also makes shorter exposure possible—which is an advantage in winter or in poor light.

Print by Artificial Light

"The gas light paper method is the favorite way of making prints. It may be used with various types of artificial light. The manipulation is simple.

Directions for use are usually inclosed in the package. The developer may be obtained in prepared packages similar to those put up for tank use. The developing paper can be bought in a variety of surfaces and weights so as to meet every need.

"Persons who are interested in photography should have some publications. All makers of photographic materials have manuals published on the uses of their goods. Most of these can be had for the asking. There are other good books and several photographic journals."

Dead limbs take a great deal of water from growing apple trees. They are in the way at gathering time and make the whole crop look diseased. If caused by canker, the disease will spread to other parts of the orchard. Prune them out now.

Send for Butter Wrappers today.

Field and Farm

VALUE OF FARM SCALES Wm. Olsen.

If we make a profit from our farm, we must know the day of guessing is past. We must bear in mind that what we produce and sell from our farms is our whole stock in trade. We must have the same means of protecting ourselves that the grocer, the liveryman, or the hardwareman has, if we are to succeed. The grocer does not guess at the number of pounds of sugar he sells us, and he does the weighing himself. The hardwareman sells us nails by weight. If we happen to be out of hay and drive up to the livery barn or feed store and buy a few bales we are charged for so many pounds. We too, must have scales in our dealings with others. Otherwise the chances are in favor of our being the loser in most cases. We need them to verify weights on articles we buy. We need them in our own work. We should know the amount of hay and other food we are feeding to our live-stock. It is important to know of the gain in weight in stock being fattened and to find out which is the more profitable of the different kinds of feed we are using.

It is not always the cost of a machine or implement that should be considered as to whether you should buy it or not. It is the question of the use you have for it.

Scales are an absolute necessity on any well managed farm in order to secure the greatest returns for the products sold there from. This I have found to be true from my experience of a number of years in the use of scales and I am safe in asserting that the farmer who has none will make a very profitable investment in the purchase of a small platform scale for his own use to ascertain the correct weight of his stock, hay, grain, potatoes, etc., when he desires to sell or to buy.

Some tools are used more often than others, thus helping to determine their value.

There is hardly a day in the year that my scales do not serve some useful purpose and I feel that I could not run my farm successfully without them.

A pair of good platform scales can be bought for \$65.00 to \$150.00. A little figuring will show that it is not only a good investment but that such a scale will actually pay for itself in one or two years, to say nothing of the convenience and satisfaction of having it on the farm always ready for use. But it is not in out-of-doors matters only that scales are useful. In the kitchen a small scale serves a most useful purpose in finding the weight of small articles used in the kitchen. We sell several pounds of butter each week, and could not guarantee full weight to our customers were it not for the use of small "household" scale. The small scales come in handy when weighing alfalfa, clover, or grass seed for sowing. There are a great many little things to be weighed on the farm and the small scale comes into use almost every day. Many farmers lose enough in the run of a few years to pay for a large and small scale by selling their produce by measure or by guessing it off. Business done by guess is one reason why some farmers do not get along in the way as they would like. If we are to run our own and get what is due us we must do business

in a businesslike way. And a scale in the house and another in the yard will help keep the ledger properly balanced.

It will only cost a post card or two to write to your dealers and get a catalogue describing cost and uses of scales.

FALL-PLOW THE GARDEN J. S. Gardner.

Plowing in the fall, that is, before freezing. The reasons are many, so only a few can be given here.

If your garden soil is a somewhat heavy, clayey, loam, it will be made "quicker" by fall plowing, leaving the furrow slices on edge, or as nearly so as possible.

The exposed soil will crumble up through the winter due to alternate freezing and thawing. The roughened garden surface will catch and hold more of the winter rains and snows than would a smooth, beaten-down surface. The slices themselves will dry out, and when the season at which seed can be planted does come, the furrows can be covered with the crumbled, dry soil which is in excellent condition for seed sowing and which will protect from evaporation the water caught through the winter; a sort of insurance against dry summer.

Fall plowing will also help the farmer fight insects. Those that pass the winter on the ground in crop remnants will be buried so deeply that they cannot work to the surface, and those that burrow into the ground to escape outside temperatures will be turned up to freeze and perish.

STORING ONIONS

The most essential point in the keeping quality of onions is to pull them just as soon as they have obtained their growth. Do not wait for all the tops to go down. To do so would give the onion an opportunity to start a fresh set of roots. This starts the heart and the keeping quality of the onion is impaired. The old practice of allowing the pulled onions to lie spread out in the field to cure for several days is being superseded. Now the onions are pulled, topped and ried in a day or two, and placed under shelter in such a way that air has free access to every onion. Regular onion growers have on hand great quantities of onion trays. These are usually four feet long, three feet wide and four inches deep, with inch thick strips about a foot long nailed diagonally across each corner. Thus the crates may be stacked upon one another while the air has free access. The bottoms of these crates are made of mason lath nailed a quarter of an inch apart to facilitate ventilation. If onion trays are not available the onions may be spread four inches thick on any floor. The corncrib may be used to excellent advantage. Temporary shelving or floors one foot above the other would increase the storage capacity of the corncrib. The slatted crate in which onions are shipped, or tomato, or strawberry crates, may be used by filling them only half full and stacking them under shelter. Onions piled in bulk quickly heat or become musty. The "skins" stick to them, giving them a smudgy appearance rather than a clean bright look. When the cold weather comes usually just after Thanksgiving the cured onions may

They Are Going Fast

Several people now figuring on our store lease. Every piano must be sold at once regardless of cost.

Now Is the Time To Buy

YOUR FRIENDS AND NEIGHBORS ARE TAKING ADVANTAGE OF THIS GREAT CLOSING OUT SALE. WHY NOT YOU? SUPPLY YOUR HOME WITH A PIANO OR PLAYER-PIANO. WHAT IS HOME? JUST A PLACE TO EAT AND SLEEP? MAKE IT SOMETHING MORE. LET US CHANGE THE SCENE. LET MUSIC, LIFE, MERRIMENT AND HAPPINESS TAKE THE PLACE OF DULLNESS AND LONELINESS.

A Good Business Man

KNOWS WHEN TO BUY. CANDIDLY, MR. AND MRS. PIANO BUYER, NOW IS THE TIME TO BUY, EVEN THOUGH YOU SHOULD NOT WANT THE PIANO OR PLAYER-PIANO UNTIL CHRISTMAS WHEN AND WHERE DO YOU EVER EXPECT TO BUY BETTER PIANOS AND FOR LESS MONEY? DO YOU DOUBT THE GENUINENESS OF OUR RETIRING FROM BUSINESS? THEN INVESTIGATE. THAT WILL COST YOU NOTHING.

Note These Four Specials:

ONE NEW, LARGE SIZE, MAHOGANY CASE PLAYER \$297
ONE WEBER PIANOLA-PIANO, MAHOGANY CASE. \$589
ONE WHELOCK PIANOLA-PIANO, WALNUT CASE \$377
ONE STUYVESANT PIANOLA-PIANO, MISSION CASE \$333

Twenty-four new, latest style, 1917 model Player-Pianos in all fancy wood cases, grouped on the floor to sell at \$396, \$412 and \$437. These prices are less than you would pay for the same pianos without the player. Regular Pianos, all in fancy wood cases, priced at \$112, \$127 and \$137.

Special discounts for two weeks on accordions, violins, band instruments and music bags. Call while the stock is large and get your pick early.

WRITE FOR FREE CATALOG IF YOU CANNOT CALL.

Carstensen & Anson Co.

74 South Main Street, Next to McCornick's Bank

Salt Lake City

be stored in hampers, crates or slat barrels away from severe freezing. A cold dry even temperature is most desirable. Onions grown from sets seldom keep as well as those grown from seed, therefore these should be disposed of first.

WINTERING BEES.

Failure to insulate the bottom of the hive largely offsets the value of insulation around the hive in the outdoor wintering of bees, according to the U. S Department of Agriculture. Experiments conducted with a number of insulate hives showed that much heat was lost from the unprotected hive bottom. Insulating these bottoms was found to increase their value greatly. Manufacturers, therefore, have been advised to build insulated hives with insulated bottoms. The choice of insulating material is of minor importance, as the materials commonly used—shavings, sawdust, leaves, and chaff—do not differ greatly in insulating value.

“Beekeepers have repeatedly claimed that excessive insulation is even more detrimental in winter than insufficient insulation, because of the failure of the colony to warm up on bright days. To test this theory, a colony was packed in the fall of 1915 with 16 inches of sawdust on all sides,

top and bottom. Temperature records were made at frequent intervals every day throughout the winter and spring. The colony remained in excellent condition in every respect throughout the winter, being little affected by high winds, and after brood rearing began it built up with great rapidity. Then, to continue observations on the effect of insulation on the building up of a colony, the packing was allowed to remain all summer. Except for the impossibility of manipulating the colony, it remained in excellent condition. It seems clear, therefore, that beekeepers need not fear any detrimental results from abundant insulation at any season of the year.”

SPECIALTY FARMING

Observing the price of all kinds of food advancing, the average man feels like offering much advice about the raising of these products. Of course such suggestions are apt to be worthless, but it is admitted by most experts that farm methods of past years have been inefficient and unbusinesslike. So the consumer may perhaps express an opinion about the general principles on which he thinks farming could be placed more on a business basis.

A hint in that direction is offered by a dispatch just published from Burlington, Vt., telling how one man had made \$8,000 by raising cabbages on twelve acres of land. While a good many farmers are making handsome profits nowadays, it is not likely that many of them have cleaned up \$8,000 in one year by raising cabbages. This man no doubt succeeded by specializing on this crop. He must have studied every authority on the raising of this vegetable, and talked with every man who could give him any practical information.

Many farmers fritter away their energy by doing too many different things. In most forms of production the man who wins out is the one who specializes. He produces few lines, but gets out a large amount on each line. In that way his help become expert on that proposition. The expense account grows smaller per unit of production, and the results should become a better quality.

Of course in specialty farming, if there is a crop failure, it is more disastrous. But the specialty farmer should be better able to protect his crop from insect pests and the vicissitudes of weather.

The consumer's hat goes off to the farmer who can make a success in any kind of food raising. He performs a public service in a time of struggle with living costs.—Herald Republican.

WEBSTER—A LA COCKNEY

Two English costermongers were pushing their carts along, when one of them picked up a torn sheet of newspaper. As he stopped and scanned the page the other fellow called out impatiently:

“Aw, come on! Wot ye tryin' to do? Ye cawn't read the pyper.”

“I can so read the pyper! If ye don't believe me I'll show ye.” And he read off a few simple words.

The skeptic pointed to a word and demanded: “Now, wot's thot word—can ye tell me?”

“An' I can so,” replied the reader; “thot's category.”

“Category, is it?” sniffed the other; “an' 'ow do ye tell what such a long word may mean?”

His friend puffed with importance. “Well, I'll tell ye. Ye takes hit

Double Beater

Makes
Even Spreading
Quick
Work

Flying Dutchman

Wide Spread
Spreader



Keep your land fertile—save time, labor and manure with the Flying Dutchman, a practical, low down, endless apron, wide spread spreader. It has up-to-date exclusive features which are worth while.

Double Beater, with second beater running at high speed, gives manure second handling, pulverizes it more thoroughly—makes a wider, more even spread.

Separate Direct Axle Drive
for Both Beater and Apron

prevents undue strain on beater mechanism as is the case on spreaders having apron driven through beater—insures reliable power, durability, freedom from trouble and repair expense.

THE MOLINE LINE INCLUDES

Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Vehicles, Wagons.

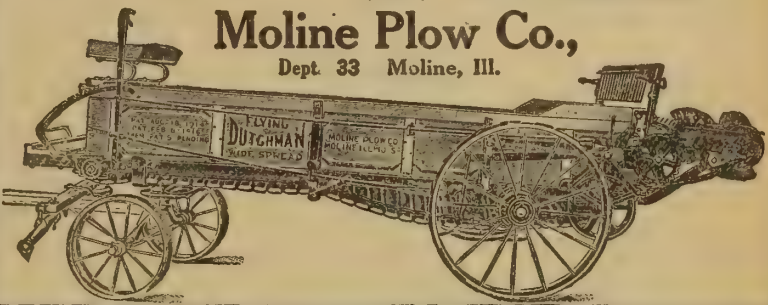
Unusually Light Draft is secured by short wheel base, hitch close to the load, wheels well under the load, full equipment of roller bearings on driving gear and beater mechanism.

The Flying Dutchman is easy to load, stands low with ample clearance between ground and lowest part of apron.

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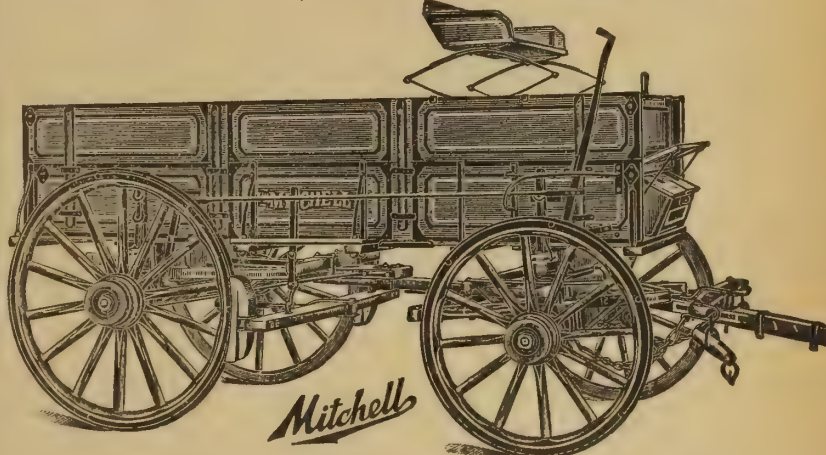
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hapart, an' ye finds the meanin' hof heach part an' then ye puts hit together hagain.”

With a dirty finger he pointed out the syllables of the word. “Now, cat. Ye knows wot a cat his?” The open-mouthed listener nodded.

“Well, then next comes 'e. Now thot won't be no she cat; hit's a 'e cat—see?” Another nod was the reply.

“Well, next his g-o-r-y. Thot spells gory; thot means bloody. So there ye 'ave hit—hit's a bloody tom cat, ye fool.”—Country Gentleman.



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Debe Music Co. SALT LAKE



soften as it rises. Do not add water to the dough unless it is absolutely necessary to work in the flour. Set the dough back to rise again—temperature at about 86 degrees F.—until it has trebled in volume, which will require another hour or two. Then divide the dough into four approximately equal parts, reserving a tiny lump weighing 2 or 3 ounces for an "indicator." Shape the sample into a ball and press it into the bottom of a small tumbler with straight sides. The glass should be slightly warmed. Note the volume of the ball of dough in the tumbler and mark the glass at twice this volume.

Mold the four portions into loaves and place in greased pans which have been slightly warmed. Place the glass containing the "indicator" beside the pans and let all rise, under proper temperature, until the "indicator" shows that it has doubled in volume. Then place the loaves in the oven and bake in a good, steady heat (400 degrees to 425 degrees F.) for 45 minutes.

To test oven.—Where no oven thermometer is at hand, a convenient test will be to put a teaspoonful of flour in an earthen dish in the oven. If this flour becomes light brown

evenly throughout in 5 minutes time, the oven is right for bread baking. If the floor scorches in that time the oven is too hot.

Potato Bread—Sponge Method.
For four one-pound loaves are required:

3 pounds of boiled and peeled potatoes.

2½ pounds of good bread flour.

3 level tablespoonfuls of sugar.

1½ level tablespoonfuls of salt.

1 cake of compressed yeast.

4 tablespoonfuls of water.

Boil, peel, and mash the potatoes as directed in the straight dough method. In the evening take 1½ pounds, or 2½ solidly packed half-pint cupfuls, of the cool mashed potato, add to it the salt, 4 ounces of flour (1 scant half-pint cupful) and the yeast rubbed smooth with the water, reserving one spoonful to rinse the cup.

In the morning add the remainder of the potato, the sugar, and the rest of the flour. Knead thoroughly until a smooth and very stiff dough is formed. After working the dough, set it to rise according to the directions given for the second rising under the straight dough method. Thereafter handle the dough exactly in the same way as is given under the straight dough method.

Potato Bread Rolls.

Very good rolls can be made from a similar mixture of boiled potatoes and flour by adding shortening and sugar. The following proportions will yield one dozen small rolls:

8 ounces of boiled and peeled potatoes.

6 ounces of sifted flour.*

1-3 cake of compressed yeast.

3-4 level teaspoonful of salt.

2 tablespoonfuls of lukewarm water.

2 tablespoonfuls of sugar.

2 tablespoonfuls of butter.

*Two tablespoonfuls of powdered milk, added to the dough, will greatly improve the quality of the rolls. Although milk itself or cream may be used, it must be borne in mind that they will increase the liquid content.

Boil, peel and mash the potatoes as directed for bread making. Add in order, to this the salt, the powdered milk, (if used) the yeast rubbed smooth and mixed with the water, and lastly two tablespoonfuls of flour. Let this mixture stand at a temperature of about 86 degrees F. until the dough begins to collapse. Add to this sponge the butter, the sugar, and the remainder of the flour and, if necessary, enough more flour to make a very stiff dough. Knead thoroughly until a smooth dough which is no longer sticky has been formed. Set back to rise again, and when the dough has trebled in volume, knead lightly, form into small balls and place, not too close together, in greased pans. Allow to rise until double in volume, as shown by the "indicator," and bake 20 minutes in a moderately hot oven, at about 400 degrees F.

DRESSINGS
Turkey

1. 4 c. bread crumbs.
½ c. suet chopped finely.
1 tsp. Salt.
1 tbsp. parsley cut finely.
1 tbsp. grated lemon peel.
1 egg.

2. 2 c. soft bread crumbs.
¼ c. Melted butter.
½ tsp. Salt.
¼ tsp. pepper.
1 tsp. sage.
1 egg.



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12 acres of first-class land at Brigham City. 7-room house which cost \$2500. The place is now insured for \$2250. This is an exceptionally good buy and can be had on any reasonable terms. This place was sold for \$8000 three years ago, but on account of unforeseen circumstances the place can be bought for \$3600.

16 acres of excellent land at Woods Cross. Part garden and part alfalfa. Has a two-story, six-room house, frame barn, for twenty head of stock, chicken coop for one thousand chickens, ample water, and is only six miles from Salt Lake City. There are one thousand hens and all necessary equipment which pass with the sale of this place. The party owning this claims that the chickens are now producing more eggs than all of Salt Lake and Davis counties put together. The owner has an excellent opportunity open for him and for that reason is offering his place for sale, but it will only be for sale for six months. This is an exceptionally good buy at \$6000.

3 acres just south of Murray. Has an abundance of water, 5-room brick house; carries an insurance of \$1500 and all necessary implements to run the place with. On any reasonable terms, at a price of \$3500.

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Live Stock

SMALL PIGS.

In traveling through the country at
this time of the year a great many
pigs weighing not more than 50 to 70
pound are seen in the feed lots and
pastures.

To be marketed at a price any-
where near the top these pigs must
be carried through the winter at
least until January or February.
When one considers the additional
cost of gains made through the win-
ter months when no green feed is
available one is led to wonder
whether it would not be more profit-
able to have the pigs larger at this
time of year. That it is more profit-
able to have the pigs larger at this
time of year, at least in most cases,
is proven by the fact that the most
successful hog raisers see to it that
their spring pigs weigh at least 110
to 135 pounds by the end of Septem-
ber. Should one undertake to criti-
cise a man with 60-pound pigs and
tell him that his pigs should be larger
an argument immediately follows.

The average farmer knows that
his pigs should be larger at this
time of year to be profitable. His
problem is how to get them larger.
Whenever small pigs are found at
this time of year several shortcom-
ings can be located in the manage-
ment the pigs have had. The first
is that inferior, undersized breeding
stock has been used, the second is
that the pigs were farrowed late in
the spring and the third is, that they
have gone through the summer on
pasture but with too limited a grain
ration. The first essential in raising
big growthy pigs that can be mar-
keted in the month of November at
a weight of 175 to 200 pounds is that
good, big, heavy boned breeding
stock must be used.

For some reason or other a pig
farrowed in March or early in April,
always seems to grow faster than
one farrowed in May or June. The
second essential to rapid growth of
pigs is that they be farrowed early.
March is the month selected as the
most successful farrowing month by
the best hog raisers. It is true that
it takes something of a building and
a little care to farrow the pig crop in
March, but it pays. In order that pigs
may make a rapid growth through the
summer months they must have a
combination of good pasture and a
suitable grain ration. It has been
proven a good many times that pigs
will make the most rapid growth
when running on good pasture and
getting their grain from a self-feed-
er. However, this has not always
proved the most economical method
of making the gains. In the work at
the North Dakota Experiment Station
covering several years, good gains
have been made when growing pigs
were pasturing on alfalfa and receiv-
ing a grain ration of 3 pounds per
day per 100 pounds live weight of
pigs.

It has been demonstrated that hog-
ging off corn is one of the most
economical and practical ways of
fattening pigs. However, if this is to
be done successfully, the pigs should
weigh an average of 115 to 125
pounds at least when they are turned
into the corn in September. This is
another reason why every effort
should be made to get the pigs early
in the spring and grow them rapidly
through the summer months. —W. H.
P., North Dakota Experiment Station.

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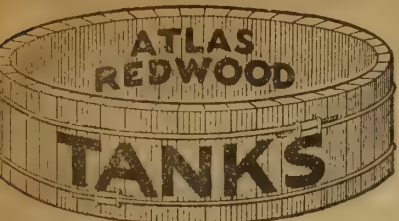


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**TYPES AND STAGES
OF COMMUNICABLE
DISEASES IN ANIMALS**

Disease may be defined as a condition in which an animal is unable to accustom itself to its surroundings, and in which there is a change from the normal in the form or function of the animal's body. As diseases may vary so greatly, both in form and kind, it is practically impossible to satisfactorily classify them except in a general way. The infectious diseases are most commonly classified according to the extent to which the body is affected and according to the duration of the infection.

There are two main types of infectious diseases, local and general. Local diseases are those in which the body is able to keep the infective organisms near the point of entrance or, at the point where they first multiply. General diseases are those in which the infection is widely distributed throughout the body, mainly by gaining entrance to the circulation. All diseases are at first local. Some, as blackleg, become generalized in a short time (few hours to several days) while others, as tuberculosis, usually require a considerable time (few weeks to several months). Most of the local diseases are caused by mixed infections (several organisms) the majority of which are pus producers. The general type are mainly specific diseases, i. e., caused by but one organism which tends to produce the same symptoms and the same tissue changes. However, in many of the specific diseases other organisms often play a part (after the initial infection) and may even do the most damage.

According to the length of time of the infection, diseases are generally classified as acute and chronic. Acute diseases are of short duration, show active symptoms from the start, are most likely to occur in the first animals affected in an outbreak, and usually terminate either in complete recovery or death. The chronic type is of slow onset, long duration, shows mild symptoms, and is usually followed by progressive tissue changes ending to deformity or partial or entire loss of function of some organ.

In the same outbreak of an infectious disease we often find a great variation in the course of intensity of that disease in different individuals. The first affected tending to show the acute type others showing the chronic form, while some are not infected at all. This variation is due to individual resistance and can only be explained by the theories of immunity. As great a variation is often noticed between the types of infection in different outbreaks in the same or different regions. Part of this is due to the degree of virulence (disease producing power) of the organism producing the particular outbreak. The various factors which produce a high or low virulence, in different outbreaks, are unknown. The age of the animals affected, the food, water and surroundings, undoubtedly play a part. Some organisms can only produce disease (blackleg, hemorrhagic, septicemia) when certain unknown conditions are present, even though the organisms are very abundant in the soil of most localities.

Most specific diseases pass through certain definite stages and are said to be typical. These stages in order are as follows: (1) Infection, or entrance of the organism into the body. (2) In cubation, a period without

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symptoms in which the organisms are multiplying. (3) Invasion, when the specific symptoms first develop as a result of the spread of the organisms of their products from the point of infection. (4) Acme or the period when the symptoms are most intense. (5) Decline, a period in which the symptoms disappear. (6) Convalescence, a period of repair of structure and resumption of function, usually of short duration in animals.

Variations from the typical course of a disease are not uncommon and tend to greatly confuse diagnosis.—A. R. Hahner, Veterinarian.

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POULTRY

FALL MANAGEMENT IN THE POULTRY YARD

The fall season is the natural time for culling in the poultry flock. Surplus cockerels that will not be needed for next spring's breeding work should be marketed at once before they shall have passed the broiler stage. Such birds if held will consume feed and become a source of unwarranted expense during the dormant season.

If the mistake has been made of holding over old hens or cocks, they should be sold. They are certain to prove a loss on the investment in the home flock unless the hens are exceptional producers and are to be kept for the production of eggs for hatching. Generally speaking, however, it is more economical to have the laying stock composed of birds in their first laying year.

In selecting pullets for the winter quarters a rigid culling should be resorted to. Do not keep birds that have weak stamina or are in any way deformed. Such birds will necessarily be inferior layers and if used in a breeding pen will produce offspring lacking in natural vigor and will not be resistant to such spring troubles as White Diarrhea, leg weakness and bronchitis. Reserve pullets that are active and manifest an alert, nervous temperament. A bright eye, deep back and a characteristic strut are essentials in a good producer.

Before placing the birds in the laying quarters due preparation should be made. A good coat of whitewash will improve the appearance of the house and will tend to offset any disease germs that may be lurking in some dark crevice. It is recommended that about three quarts of kerosene oil be placed in fifteen quarts of the wash for the purpose of combating red mites.

During the winter and early spring season there is entirely too much trouble in our poultry flocks from colds, roup, and similar respiratory diseases. These are largely a result of drafts in the houses. It will pay the poultry keeper, therefore, to nail up any cracks in the back, sides and roof of his henhouse.

Do not crowd the poultry house. From two to five square feet of floor space per bird should be allowed. The exact ratio should depend upon the breed and the extent of the yarding. As a rule it will be found advisable to allow about four square feet for the lighter breeds, such as the leghorns.

There should be about five or six inches of straw litter placed in the house. The grain may be fed in this. The birds will scratch in this and exercise will be induced continually. Clean nesting material should be placed in the nest boxes. There should be one nest box for every four birds.—Geo. W. Hervey.

SHARPENING EDGED TOOLS

Edged tools are best sharpened by holding them at an angle against the stone. Razors are held flat, but they are hollow-ground and the part touching the stone lacks much of being parallel with it. Knives and other tools, not hollow-ground should be held so as to give a bevel, varying from the long slope on knives and

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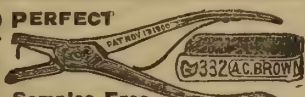
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Agricultural Wisdom of The Ancients

While we farmers fully appreciate the professional enthusiasm which leads modern agricultural writers to delve into such subjects as "Nematodes and their Relationships" and bacteria and nodular hypothesis in connection with legumes and other such subjects of vital importance to the everyday life of the farmer, it is refreshing to go back to the writings of men who lived centuries ago and get a few pointers on real farm management. Read the following from the writings of Cato, of ancient Rome:

When you have arrived at your country house and have saluted your household, you should make the rounds of the farm the same day. * * * When you have observed how the field work has progressed, what things have been done, and what remains undone, you should summon your overseer the next day and should call for a report of what has been done in good season and why it has not been possible to complete the rest. * * * The overseer will report that he himself has worked diligently, but that some slaves have been sick and others truant, the weather has been bad, and that it has been necessary to work the public roads. What he has given these and many other excuses, you should recall to his attention the program of work which you laid out for him on your last visit and compare it with the results attained. If the weather has been bad, count how many stormy days there have been, and rehearse what work could have been

done despite the rain, such as washing and pitching the wine vats, cleaning out the barns, sorting the grain, hauling out and composting the manure, cleaning seed, mending the old gear and making new. On feast days the old ditches should be mended, the public roads worked, briars cut down, the garden dug, the meadow cleaned, the hedges trimmed and the clippings collected and burned, and the fish pond cleaned out. On such days, furthermore, the slaves' rations should be cut down as compared with what is allowed when they are working in the fields in fine weather.

If the farmer of today should undertake to carry out such a program he would be considered an up-to-date farmer. With all our learning, our mechanical conveniences, and our boasted superiority we still have something to learn from the thoroughness, the energy, and the agricultural knowledge of the ancients.—I. D. O'D.

THE MODEST BASS

The bass singer in a country choir dreamed one night that he died and went to heaven. Saint Peter took him around to inspect the choir. On being told that he could arrange the singers according to his own taste, he said:

"I shall need twenty thousand more altos, twenty thousand more sopranos and ten thousand more tenors."

"But what will you do for bass?" exclaimed Saint Peter.

"Oh, I can sing bass," was the quick retort.

"Is this a first-class restaurant?" asked that haughty individual.

"Oh, yes," answered the waiter; "but we don't mind serving you."

Farmers, Ranchers, Stockmen

NOW IS THE TIME TO REPAIR THE OLD FENCES AND BUILD NEW ONES.

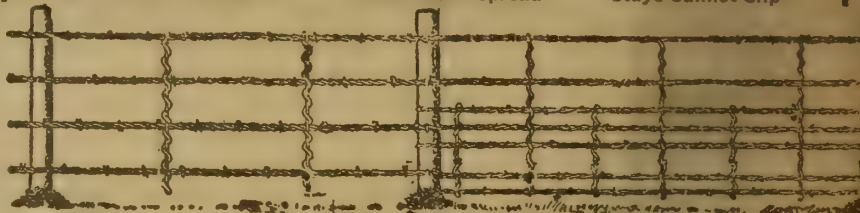
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VOLUME XII; No. 18

LEHI AND SALT LAKE CITY, UTAH

DECEMBER 2, 1916

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Increase Our Production of Grains

The amount of grain produced during 1916 did not show quite so large an increase as it did during 1915. Several reasons might be given for this.

Dry-farming has developed so much during the past few years that our annual production of wheat and other grains has shown a very remarkable increase.

Thousands of acres have been brought under cultivation, that years ago was thought to be worthless and we never dreamed that certain sections of our state would be shipping grain in car load lots, from what was known as sagebrush land.

In some sections nearly all of the grain is grown on dry-farm land and the other crops such as beets, potatoes and alfalfa are cultivated on the irrigated lands.

Prices have been good for wheat and all grains and this has encouraged the increased number of acres being planted. There are good prospects for the coming year and any farmer who will produce wheat or any kind of

food stuff can expect to get good prices for it.

Many of our farmers have learned the value of good seed and carefully select their seed for planting and in this way increase the number of bushels per acre with little or no more work than if they produced only half the amount on the same number of acres.

It is a poor practice to neglect your seed bed, the land should be put in good condition and kept that way if one expects to get the best returns. Often the fallow land of the dry-farms are seriously neglected. Weeds such as the sun flower, thistle and the cockle are allowed to grow, thus taking away the moisture that should be used to produce a crop the following year.

Dry-farming is no longer an experiment to the man who follows proper methods. Although we have increased our production of grains, we have not anywhere near reached the limit. With good prices assured our crop for 1917 should be a big one.

Poultry Pointers

With the price of feeds constantly soaring, the average poultry-keeper has had a difficult problem to solve. Many figured on the production of poultry and eggs remaining at the 1915-16 figures, and this old price left so small a margin of profit that they lost confidence and disposed of the greater part of their flocks. In many cases the beginner who raised poultry only as a side line sold the entire flock, with the idea of again starting when feed prices went back to their normal figure. But with the natural law of supply and demand, the prices for poultry and eggs have steadily advanced with the price of grain. Last year the high price for fresh eggs, white shells, went to 75 cents a dozen in New York. This year the \$1 mark will be reached for the best grades. This is not caused by any egg trust, as so many are led to believe, but purely from a supply and demand standpoint. There is an actual shortage in fresh hen fruit. There always will be in the big cities a class of buyers willing to pay for the next best food to milk, the fresh egg.

Like the producers of milk, the poultrykeeper must obtain better prices for his product, with the increased cost of all feeds, labor, etc., or be compelled to go out of the raising of poultry. This condition has been in a measure a good thing for the whole poultry industry.

But a few years back the country underwent a poultry boom. Hatching eggs, stock and day-old chicks sold at big figures. Every one got in the business, rich and poor staked claims on the gold mine. Then the reaction came and since 1915 things have grown steadily worse. But the low mark has been reached the real shortage of good stock is here, and the poultry industry will gradually move forward along safe and sane lines, the reaction, it is, set prices for below the real value. But with education along these lines from the experiment stations and the poultry press, the persevering poultry breeder will come into his own. The main problem now is the feeding for best results of the poultry, and it is here that many poultry-keepers, fall down. In the desire to cut out the chief expense, cheap feeds were purchased. substitutes for well-known egg-layers were tried, and with results that never warranted their adoption. In no line can one get something for nothing, and cheap goods can never be as good as those with good quality. The feed merchant must have his profit, as well as the poultry-keeper, and so while putting out a feed to meet the popular demand, quality in some way must be cut down. If the poultry-keeper would carefully look into the waste in grades, the poor quality of the grain, the difference in weight of the new grains, such as corn, wheat, etc., in their milk form, the extra weight of the new corn, etc., in each 100 pounds, they would soon figure that it pays to feed the product of a concern that stands back of the poultry feed they put out. But in no case will the firms putting out first-class feeds be found to be the cheapest in price. The cleaned grains, of good quality, have greater feeding values, and the purchaser obtains 100 pounds in each bag and not so many pounds of waste that one can so often find in every 100 pounds of cheap

feed. It is false economy on the part of any poultry-keeper to purchase feeds that will not give the results. Like poultry breeders, there are leaders in all lines, and it will pay the breeder of poultry to purchase feeds from those firms that have first-class brands that have made good in the hands of practical poultry-keepers. Once getting a good feed, it is wise to stick to it, as long as the grade continues to be as represented and gives results.

The leading commercial poultry-keepers are always looking for the best, and once they find a good brand, they stick to it. But it is usually the beginner that jumps from one feed to another, and generally the price plays the important part, with the result that the poultry do not get a feed with full strength, and at a price that as a rule is dear in the long run. With poultry and eggs at the present figures, the poultry-keeper with a quality flock can afford to purchase A-1 feeds and place the balance on the right side of the ledger.

The small incubator still has its place, and every poultry keeper should look well into the merits of the different makes now on the market. Marked improvement is made each year in the incubator, and it is fast displacing the hen as a hatcher. It breaks no eggs, does not leave the nest, and will hatch as many eggs as the hen when properly run, and, contrary to the belief of many, the "wooden hen" will hatch chicks just as strong, if properly operated.

With improved poultry knowledge the beginner has a better chance at making a start in poultry than those who started in former years. While it is true that feed was lower, the price of poultry and eggs was considerably less than now. Incubation was not as near perfect, and the wonderful improvement in brooders has made the rearing of chicks much easier than in the past. These improvements largely offset the price of feeds. Few beginning now can realize the large death rate that was common in chicks under the old-time hovers.

CULLING THE FLOCK

The exceptionally high prices of poultry products this year warrant a rigid culling of the flock. The sooner this is done the better.

Males of large, vigorous type, showing well-developed breast, strong bone, large comb and wattles, and bright eyes, should be held for breeding purposes. Crow heads, long beaks, and weak legs indicate a lack of constitutional vigor and are usually found in poor producers. Hold the late-molting hen and sell the early-molting hen, the persistent or allsummer sitter, and the over-fat hen. Sell the immature pullets, or runts, and save only the best. Never breed from diseased stock.

Free range for breeders is essential, and it is not a wise plan to confine them permanently in winter quarters until snow comes.

A PROFITABLE COW

An exchange advertises a cow for sale as follows:

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Piano Organ Violin Voice Dramatic
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Shall We Have a Taxpayers League

Salt Lake City, Utah, Nov. 21, 1916.
Editor Utah Farmer,
Lehi, Utah.

Dear Sir:

I trust the following facts regarding the tax situation in the state of Utah will be deemed by you of sufficient merit to find space in your paper.

First: The tax amendment to the Constitution has been defeated. No exemption or reduction in the taxes of the small home owner can now be made by the incoming legislature.

Second: The taxes of the producing mines of the state which were reduced nearly two-thirds by the law of the last legislature can now only be made again in proportion to their taxes heretofore by the repeal of that law. (It must be remembered that the organized effort of the Utah Chapter American Mining Congress defeated this amendment.)

Third: That notwithstanding a large increase in the revenues of the state from the Inheritance Tax, the corporation tax, the automobile license tax, and state fees, that there will be a deficit in the state treasury this year of about one half million dollars. This is due to the fact that the appropriations of the last legislature were greater than the income from direct taxes and all other sources. And this, notwithstanding the fact that the Governor vetoed a large number of appropriation bills and has withheld from the University of Utah nearly seventy thousand dollars appropriated to its use for new buildings.

Fourth: That there will be a flood of appropriation bills presented to the legislature as soon as it meets, from all state institutions and state boards and from the different counties for roads and bridges, etc. One institution as already made public, through its board of Regents, that it will ask for 225,000. The query is, how are taxes to be reduced if appropriations are to be increased.

Fifth: The people of the state should realize that three-fourths of their taxes are assessed and spent by themselves in their respective cities and counties and in their school districts. These taxes cannot be reduced except at a loss in public expenditure, and in efficiency in city and county governments and in public schools.

Sixth: Public expenditures have been increasing for one hundred years in every civilized government. Modern life demands constantly increasing public expenditures for better roads, better schools, better supervision over health and sanitation, better protection from combinations of capital, etc., etc. Public expenditures will not be decreased in any appreciable amount.

Seventh: The real problem that confronts the taxpayer of the state is the equitable distribution of the tax burden. A large amount of the property of the state wholly escapes taxation, although our Constitution and laws state that all property shall be taxed in proportion to its value. The tax laws of our state are such that seemingly they cannot be enforced. Some property, such as the producing mines of our state, are ridiculously undertaxed in proportion to other property.

Eight: Modern life has made the general property tax, which is the tax system of the state of Utah, a most unjust and discriminatory system of taxation in favor of the man who has large personal property, such as money, stocks, bonds, credits, etc., which escapes taxation and against the man whose small earthly possessions are easily seen by the Assessor. Such a man is the owner of the small home and farm. The railroad, the telephone company, the electric light company, the merchant, the manufacturer, all add to the cost of their product the taxes which they pay and are thus able to largely shift these taxes to the man who consumes their products. Thus he is not only directly taxed on all his earthly possessions, but indirectly he pays the taxes of others on the things he consumes. It is a crying shame and a disgrace to the citizens of the state of Utah that no law can be passed to relieve him in part of his tax burden because of the Constitution of the state of Utah. The legislature periodically proposes such an amendment but the interests who do not want any exemption in the taxes of the small home owner invariably tell him, through the press, that the amendment is to increase his taxes, not to reduce them, and to place additional power in taxing authorities and thus deceived he votes against his only method of relief.

Ninth: It has usually been necessary for the taxpayers of any state to form a taxpayers league before any intelligent reform in the tax laws could be consummated. Every large corporation has its tax attorney. They lobby at each legislature. It is their business to see that no tax laws are passed which will increase the taxes of their respective masters. As soon as this legislature meets, as with former legislatures, free transportation on the railroads will be passed around, free theatre tickets distributed, dinners and luncheons provided and special talks by attorneys and others arranged.

It would seem that some organized effort is necessary on the part of the

The Producers Opportunity In Dairying

Following is part of an address delivered at the National Dairy Show by Fred W. Merrill, of the De Laval Separator Company:

I am confident of my statement when I say to you that the dairy industry is bigger, better, more efficient and more far-reaching in its influence than it has ever been in its history. There has never been a time when the dairymen of the country were so full of hope, or when the future seemed to be so full of promise. The industry was so well prepared to meet the demands made of it and yet to continue its normal growth and development.

* * * * *

That the producer has an opportunity never presented to him before cannot be gainsaid. The demand for more milk, butter and cheese has already been made and at prices never reached for so long a period. With a savage war raging over almost an entire continent and the problem of averting a general condition of starvation existing, it is only natural that the very sources of food would be attacked. Hence it is not unnatural that the report should reach us that foreign countries are killing their dairy cattle and using them for food. It is to be expected that the real food value of dairy products would be appreciated and the demand made for a more general consumption in all of the nations engaged in war. It is natural, too, that we should be called upon to furnish much of that food, and it is our opportunity, much as we dislike opportunities that come to us as a result of the misfortunes of other nations.

I cannot see any other result than that the demand for dairy cattle is going to be greater in the future than it has ever been. It seems to me that if the time was ever opportune for the man living on the farm to divert a part of his time and attention to the dairy business it is now. The prices being paid for dairy products are bound to continue high, for the reason that the foreign demand is going to continue, and further, for the reason that dairy products are going to play a more important part in solving the high cost of living in American homes.

I do not ever remember the time when so much encouragement was given to the American farmer to induce him to go into dairying. During

average taxpayer. What do you suggest?

FRANCIS W. KIRKHAM,
Formerly Secretary State Board of Commissioners on Revenue and Taxation.

the past five years the sentiment has grown that the banker and the business man should encourage dairying and do so to the extent that they furnish the money with which to do it. There are hundreds of live, wide-awake bankers throughout the country that have taken the lead in the matter and have been directly responsible for the introduction of dairy cattle in sections of country where the dairy cow has never been. You can ride across this continent from ocean to ocean and from Canada to Mexico and find the beginner in dairying in almost every section. The big creamery companies have followed closely and have furnished a market for the farmer's cream even though he is removed a hundred miles from the railroad.

To my mind there has been no better pioneer development work done than that of the Texas Industrial Congress when they raised two hundred and fifty thousand dollars to be used for the encouragement and development of the dairy cow in Texas. This work has been patterned after in nearly every northern and western state, and the individual bankers who have done similar work on a scale consistent with their means are legion in number. The work of the Federal Dairy Division in the south has been brought to your attention at various times and already there is an awakening in the south for a better agriculture that is wonderful to contemplate. Today the Federal Dairy Division, the State Departments and many commercial organizations are spending thousands of dollars every month to lend encouragement to men who want to enter the dairy business. The assistance is so generally distributed that I challenge any one to show any other industry whose various interests are doing as much to build all factors that contribute to the well being of the industry.

I can offer no better proof of this awakening than that which has been made recently in Southern Illinois when fifty thousand people gathered to observe dairy day, or that furnished when a dairy train composed of the breeders of Jersey cattle and the best cattle of the breed were carried from Waterloo to this show and were greeted by thousands of people at every stopping place. You have no better evidence of the interest in dairying than to witness the thousands of people who are attending this show daily.

The dairy industry has become national. It used to be local, then sectional. It was the woman's part of the farm work; it was the part of

(Continued on page 7)

Dairying

IMPORTANCE OF PURE-

BRED SIRE

Wonderful progress has been made in the breeding of dairy cattle during the past few years, and the scales, Babcock test and show ring have all been large factors in helping to accomplish this result. Yet another big factor has been the work of the testing associations which have sprung up all over the country, and no one can foresee the effects of the splendid influence now being spread by these organizations. Men will become interested in a subject only as it applies to themselves. And those who are live-stock breeders in every sense of the term have emphasized in private and in public, at meetings and through and in public, at meetings and through journals, the importance of a purebred sire in a herd of any kind of stock. It sounds improbable, yet it is most probable, the remark made by a man who is thoroughly conversant with live-stock conditions, that over half the sires being used on farms ought to be shot. So many farmers are propagators, not breeders.

Dairymen and milk producers are justified under existing conditions in going on the warpath to secure better prices for their produce. But how many of them have ever stopped to consider whether some of the fault of the poor return of their investment

may not be attributable to their own delinquencies. In the matter of keeping a herd of dairy cows there are many men who look askance at the idea of paying a little more than the average to secure a bull whose pedigree is at all times available and stands as an authentic record of his ancestry, showing the breeding and the production of several generations of the animal, but, instead, use a scrub bull.

There are hundreds of these dairymen who are like a woman at a "bargain" counter. A "sale is announced," "astounding bargains," etc., and away she goes to the store determined to get "something for nothing"; and after expending her money, she usually comes to the conclusion that there is nothing in it. Most of the articles she has purchased are of little real value, and if only she had bought one good serviceable thing, how much more satisfaction she would have derived from it! There are a lot of these so-called bargains in the live-stock world but usually when the scales and test are applied they are found to be wanting in real merit. In fact they are a discredit to the herd and simply eat their heads off and give practically nothing in return. The herd is tested and a low average yield is shown. A few individuals score high and others extremely low. Then is the time for immediate action. True, the yield of the present herd cannot be raised but by using a purebred sire, whose ancestors have proven records, the offspring invariably turn out better producers than their dams. A good purebred sire can be bought from \$150 up and if in a herd of cows he improves the milking capacity of the daughters only $1\frac{1}{2}$ lbs. each at a milking, this would mean an increase of 900 lbs. milk for the 10 months an ordinary cow should give milk.

It will, on the average, be four years after purchasing the sire before his first daughters will have brought in the first extra \$10. But assuming that in a herd of 30 to 40 cows the effect of the purebred blood from the sire increases the average milk production of say 16 daughters in three years, to the extent of 1000 lbs. each a year, that would mean 16,000 lbs. of milk at \$1.00 per 100 lbs., or \$1600, and the original cost of the sire is \$150. If a dairyman is raising heifer calves to be dairy cows, there is absolutely no reason at all for not using a purebred bull. The scrub bull is the most extravagant piece of cattle flesh on the farm, and about the only thing he is fit for is the butcher's block. There are many other ways a dairyman can improve on his milk production but the outstanding feature of successful dairy returns is the employment of a purebred sire whose ancestors have shown their dairy qualities in milk and butter records. It will prove the greatest investment a dairyman can possibly make, even if he has to sell two or three cows to do it.—The Holstein-Friesian Register.

SILAGE FROM SHOCK CORN

C. H. Eckles, Missouri Agricultural Experiment Station

Dry corn fodder may be put into the silo any time during the fall or winter with good results although it is better to put it in at the proper stage, according to the results obtained at the Missouri Station. It is very difficult to make silage in the winter time on farms which do not have water systems which make it easy to add a ton of water for every ton of

The Big Four "20" Tractor

A Light Weight, Four Cylinder, Two Speed Tractor



The Big Four "20" Farm Tractor

HERE is the outfit that will plow all your land. No more fence corners and headlands left unplowed if you use the

Big Four "20" and Emerson Power Lifted Plow

A combination of Tractor and Plow—Each made to work with the other. The power of the motor rises or lowers the plow whenever you push the lever, whether Tractor is moving or standing still.

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silage. It will not do to rely upon supplying the water through the cutter as only about a third enough can be added in this way. No better results are obtained if the water is poured on the top after the filling has been completed. Channels form and drain the upper portion of the silo leaving most of the fodder dry. There is little danger of adding too much water, but of course it makes unnecessary work.

Of ten or twelve farmers who made silage from shock corn and furnished samples for analysis, one who added apparently too little water says: "The silage was good at first, but got drier and drier toward the bottom." In a number of cases, the silage molded and, in every such case, it was found that too little water had been added. If the filling is done during wet weather, the fodder may be so damp that less need be added, but the only way to be sure of getting good results is to measure the amount of water sprayed on by the hose per minute and adjust the hose and the cutter in such a way that a ton of water will be evenly distributed over every ton of dry fodder cut into silage.

The conclusions of the College derived from filling three small silos at different dates and with the addition of different amounts of water agree closely with the opinions of the farmers who had used such silage, and may be summarized by saying that (1) the feed was satisfactory and more palatable than the shock corn, (2) such silage is not equal to that made by

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putting in the corn at the proper stage in the fall, (3) such refilling prevents the loss in feeding value, which occurs when the fodder is left in the shock, (4) silage is more convenient than shock fodder to feed, and (5) the stalk is more completely eaten.

One of the farmers who has had experience says: "I would recommend putting shock corn in the silo any time up to February, believing it to be much more valuable as silage when fed to cattle from the

shock. I prefer putting in silo at the proper stage, however." Another farmer writes: "We filled a silo in the middle of the winter. Supplied the water with a hose in the silo. Water was taken up rapidly. Silage became very hot in twenty-four hours. The silage was in fine condition when fed. Stock ate the silage practically as well as fresh corn silage. Better to fill one silo three times than to build two or three, especially on account of the greater facility in getting help."

ity while young, and for home purposes one can afford to sacrifice something in size.

For winter storage, such vegetables as the root crops, beets, carrots, turnips, winter radish, kohlrabi, rutabaga, parsnip, and salsify are usually pulled from the ground, though digging is usually necessary with long-rooted varieties such as parsnip and salsify, in order that the root may be obtained whole. This is important. Bleeding, with loss of moisture and consequent shriveling, will otherwise take place. Care must be taken in removing the tops not to cut too closely. One-half to three-quarters of an inch from the root is the proper distance. The stems will then shrivel and fall off, with no chance of bleeding.—J. J. Gardner, Colorado.

farmers in his neighborhood or other sections of the country where good farming is done. Furthermore, a man physically exhausted from a long, hard day's work is in no condition to follow and get much out of the literature of his business as reported in farm papers, agricultural bulletins, reports, and books and without the advantage of all the information available from every possible source he will find awkward situations when he comes to replan his farm for profit.

Success in farming calls for the very best effort in a man along all lines. That best effort is called for in replanning a farm for profit. The farmer who is dissatisfied with his income from the farm needs to think seriously as to whether or not his farm is planned right for the largest returns, remembering that good farming calls for keeping up the productiveness of the farm while getting maximum crops economically from the soil.—C. Beaman Smith.

Send for Butter Wrappers today.

Field and Farm

HOW TO PREVENT SMUT IN YOUR OATS

A campaign in Utah County was started last spring by County Agent B. Ballantyne and completed by his successor County Agent Clyde W. Lindsay to demonstrate the value of treating oat seed with formaldehyde for the prevention of smut. The Utah County Farm Bureau assisted in the work. A survey made in 1915 showed that the farmers of Utah County sustained a preventable loss from smut of \$6,414.00. A series of seventeen public meetings were conducted throughout the county last March at which the farmers were shown the method of dipping their seed oats. In order to display the results of the treatment most vividly 123 farmers were listed as co-operators who agreed to treat their seed as per the county agent's instructions. They also agreed to plant a small area of untreated seed as a check plot alongside of their treated grain. Of the 123 who were listed 50 planted treated grain and 73 the check plot. Fifty seven planted treated grain but kept no check plot and 16 failed to plant oats. The county agent visited these fields during the summer and by actual counting, found out the following facts. In the 50 treated fields, the average yield was nine-tenths of 1 per cent. In the 50 untreated check plots the average smut was 18 per cent. The treated oats averaged 50 bushels to the acre. The untreated averaged 41 2-3 bushels per acre. The saving to these 50 farmers was 2137 bushels or \$1,177.21. In the second plot of 57 treated fields, the average smut was 1 per cent. Records were taken in fourteen fields where the seed had been untreated which showed an average of 18 per cent smut. The average yield in the treated fields was 55 bushels per acre, while of the untreated it was 39 bushels per acre. The average saving was 16 bushels per acre. These 57 co-operators saved 5184 bushels by treating which was worth \$1,200. A total saving by the 107 co-operators amounted to \$4028.41. The survey shows further that our loss in oat smut this year was \$750, which was wholly prevented by the use of formaldehyde. As compared to the preventable loss of \$14,000 in 1915, the smut campaign of this year saved the Utah County farmer \$26,926.59.

harvested at the proper stage. Most all varieties are edible over a considerable period, but are of the highest quality only at certain stages. For example, beans are best before they become woody and develop strings, lettuce before it becomes bitter and tough. With but few exceptions, vegetables are of higher qual-

HEAD WORK HELPS WIN SUCCESS

Many a farmer fails to get adequate returns from his farm because he stays at home too closely, puts in too many hours a day following the plow, and does not often enough visit good

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We guarantee every subscriber against loss thru dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

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A clean up in the orchard will destroy many insects and bugs, it will help to control them the coming season. Why not clean up?

Cow testing associations are proving their value, here is one proof. After testing his 17 cows and finding out what they were giving he sold 7 and received more profit from the 10 remaining animals than he had received formerly from the whole herd.

Utah can boast of some "turkey trots." From the Uintah Basin one man shipped ten tons of turkeys, all within five days. They were sent out by parcel post. The Ashby Valley will produce about 4,000 turkeys this season. Large shipments of turkeys were made from San Pete Valley and also Sevier Valley.

PROVIDE SHELTER FOR LIVE-STOCK.

It is poor economy to allow your live-stock to suffer from exposure to cold, wet weather.

Expensive barns are not necessary on most of our farms. The main thing is to protect stock from draughts or winds and have a good roof to keep them dry.

Plenty of good straw for bedding will help keep them warm and will increase the amount and size of your manure pile.

The dairy cow may need a warmer place than other live-stock. The colt or calf should be given the best of care these fall nights.

The early fall storms are often harder on live-stock than the colder but drier weather later in the winter.

Remember that live-stock of all kinds will re-

spond to the care they receive. Poor treatment means slow growth and development. Good feed and good care is often half the game in producing well developed profitable live-stock.

PLANT EVERY FOOT OF GROUND.

With the present high prices for farm products holding out, it would seem a very wise thing for every farmer to plant for 1917 every foot of ground that can or will produce any food stuff.

We are not predicting extreme high prices for next year—yet this is quite probable—but we do believe, and have many good reasons for it, that all farm products will bring a good fair price. If this is true, why not produce every thing possible and profit by the conditions as they are sure to exist during 1917?

Vacant land, the corners, the wasted land along partition fences, and ditch banks should be put to use and produce something that will help to feed the warring nations. This will mean extra profit to the farmer. Help to produce the food supply which is now very short according to the government reports.

FIXING UP FOR WINTER.

Usually there are so many little things that need one's attention at this time of the year that it seems useless to remind any one of it.

Many little repair jobs have been put off until the harvest rush season was over—now is the time to check up on these little details.

Chop some wood these pleasant fall days and store it away so you will not have to go out in the storm to do this kind of work. Clean up the yards of all rubbish. Get all the manure out before the wet, rainy weather sets in.

Put your machinery away and so arrange it that you can go over it this winter. Repair the broken parts, tighten up the nuts, paint and oil where it will be helpful. Spend your winter days getting ready for the rush of work that comes each spring and summer.

RAISE MORE LIVE-STOCK.

We have often suggested reasons why the farmers of this state should produce more live-stock, here is a new reason. A local market is now bidding for your cattle, both feeders and fatted stock, and this is true also of hogs and sheep.

A careful study of the number of cars of hogs and cattle shipped out of the state to be fattened would surprise some of our farmers. Yet right here at home we have the best of feeds and everything else in order to fatten and prepare our live-stock for the market.

Why don't more farmers make a business of feeding their hay and grain to live-stock and selling it this way and retain the manure to help build up the farm. This system of doing things will furnish a better market and besides give steady employment to those on the farm.

There is profit in having live-stock on the farm and now with a local market, greater interest should be taken in this branch of agriculture.

INSURANCE

Judging from the interest that is taken in the law, very few farmers know that we have one that was enacted to encourage them to organize protection, local insurance companies.

In one or two places the farmers in that county have gotten together and organized for mutual local insurance companies.

With insurance it is much like other taxes.

The one who is least able to pay for this protection is really the one who can least afford to go without it. For this reason if insurance can be secured in local mutual companies at greatly reduced rates, farmers should organize for their protection, remembering that insurance should be efficient and dependable.

It is a sad loss when some one who has been struggling against adverse conditions meets with the loss of having his property destroyed when he is least able to stand it.

If there are a number of farmers who are interested in this important problem and want to organize, we have considerable information that we believe will be profitable to them, and it will cost only the asking for it.

"ARE THE COWS ALWAYS TO BLAME"

We often have said something about the unprofitable cow. It makes no difference whether you are milking one cow, to provide milk for the family, or milking twenty to produce milk for the market, the amount of milk produced will partly, if not largely, depend upon the feed the cow receives.

You may own a pure-bred cow, one that is capable of producing a large amount of milk, if you do not feed her properly she can not make the milk. Many a good cow fails to return a profit because of poor care and lack of proper food.

How can you expect cows to produce milk, when they are shut up in some cold draughty place and not able to get the food with which to make the milk. They can not make something out of nothing any more than the ordinary man can. Many a poor cow would produce more if given better care and the right kind of feed.

Keep only the better grade of cows and feed them well, give them proper care, and they are one of the best investments on the farm.

FARM LOAN BANKS

According to press dispatches the Federal Farm Loan Board will make the announcement within twenty days and name the cities where the twelve Federal Banks will be located.

The board has traveled twenty thousand miles and visited fifty cities to secure first hand information from the farmers.

What are the farmers of Utah doing about organizing farm loan associations. If you want to secure money at 6 per cent or less and the payments made so easy that you have from 6 years to 30 to pay it off, why, get busy and organize an association with your neighbors. In Weber County they are at work and according to D. D. McKay, President of the Farm Bureau, they will have five of these associations ready to do business with one of the big banks when they are located.

We have had some questions sent to us about rural credit organization. One we want to answer here and to emphasize it because we have letters from the Federal Farm Loan Board which says that they will not consider for membership in the government banks any organization that has taken from the farmers promotion money. In other words they want to protect the farmers, who should and can get together and promote the rural loan banks without making a promotion scheme out of it.

If there are any questions about this, don't be afraid to write us or write to Washington D. C. to the Federal Farm Loan Board and ask them to send you all details how to organize.

THE PRODUCER'S OPPORTUNITY IN DAIRYING

(Continued from page 3)

Farming to be dreaded. It was adopted only when everything else had failed. In the new sections it came only with the third settlement of the country. The dairy cow was the one which could not be fed for profitable beef production. But today everybody is interested. Dairying is the chief industry in many states and is being followed to a degree in every state. Dairying is talked about everywhere, in legislative halls, in bankers meetings, in commercial clubs, in women's clubs, and the men who are engaged in it are highly respected because they are leaders in the nation's development. Improvement in dairying in the future will proceed along definite lines. We have experimented until we are reasonably sure of our footing and are now in a position to proceed with rapid strides. Opportunities never come without bringing with them complex problems that are difficult to solve. I hope the time never comes in the dairy business when we will have solved all of the problems.

There is much to be done in the future for soil improvement and crop improvement. There is much to be done in animal selection and breeding. We need to do more effective work in the matter of eradicating diseases. There is much to be done in the problem of solving the question of labor on the dairy farm, of improving our methods of dairy farm

management and working out more economic methods of milk production.

If I am not mistaken our most serious problem is that of marketing dairy products. It is one thing to produce milk, butter and cheese, but another thing to distribute them economically and profitably.

I am hopeful, however, of a speedy and a correct solution of these problems.

The dairy cow has proved her ability to restore wasted fertility and the result of which is that dairy farms to maintain a high state of production, are the most productive, the highest priced and the most desirable. It is unfortunate that the very crops required for milk production are those which help to build and maintain soil fertility. Alfalfa, clover, vetch, oat and pea hay and other legumes constitute our most valuable feeds for roughage. Corn, wheat, oats and barley constitute the chief grain rations and any farm devoted to the growing of these crops with a proper distribution of the crops in the rotation and with the addition of the cows manure will not suffer from a depletion of its soil fertility.

The breeders of dairy cattle, it would seem, have decided upon the form and type to be desired for profitable production. The blood lines have become firmly fixed in each of the dairy breeders and any man who is willing to study and observe ought to succeed in his efforts to improve and build up his herd.

Only a few years ago, a cow producing 20 lbs. of butter seven days was considered a wonder. Today she is quite common and our requirements of her have almost doubled. With a cow producing 1205 lbs. of butterfat in a year, the standard has been placed high, but who knows how long before this record might be made to take second place.

Our breeders are increasing in number at a very fast rate. We experience no difficulty now in getting good, pure-bred males, with which to grade up the common herd, and now that the breed organizations have adopted the modern idea of business building by employing a field man to advance and protect the interests of the breed, we can look for permanent improvement and many a farmer will be safeguarded in his efforts to start in the dairy business.

It has not been very long since the idea prevailed that there was no relationship between animal diseases and diseases of the human family. It was argued that bovine tuberculosis could not be transmitted to the consumers of the cow's products. Many men discouraged the tuberculin test, and refused to maintain a quarantine for infectious diseases.

Conditions have changed, however, and our dairymen have a wider view point, a more accurate knowledge and in the future we can expect a better control of epidemics of disease and the final epidemics of diseases among our domestic animals. The plan being adopted in Wisconsin, namely, the State Accredited herd plan, is a move in the right direction. Other states can be expected to adopt it, or some similar plan and we can confidently expect to see a solution of the problem in the very near future.

The cow-testing association and the breeding circuit are pointing the way to profitable dairying. Every year the number of discarded cows is increasing and their stalls being occupied by the better bred cow. There has not been anything done in

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the last twenty years that has contributed so much to profitable dairying and has shown so clearly the fallacy of the farmer tying himself to the unprofitable scrub cow, as the organization and successful conduction of a few cow testing associations throughout the entire country. We need more of them and I think I am safe in the assertion that no community can be classed as a progressive (Continued on page 14)

Questions and Answers

IRRIGATORS QUERIES ANSWERED O. W. Israelson.

Are the advantages of measuring irrigation water sufficient to justify its practice under ordinary Utah conditions?

Yes, it is believed that under ordinary Utah conditions the advantages which come from measuring water are sufficient to justify the expense involved. Of course, it would not pay to install elaborate water measuring devices under all conditions; but yet measurement may be made within ten or fifteen per cent accuracy, which costs but very little and is well worth the effort necessary. The most striking advantages of measuring irrigation water may be summarized as follows:

First: The measurement of water makes it possible to apply the results of the many experiments which have been conducted with a view of determining proper quantities of water to use upon different soils and for different crops. Unless an irrigator measures water, the results of these experiments are entirely valueless to him.

Second: It enables one to determine whether or not he is getting the quantity of water for which he is paying.

Third: It enables him to determine by his own experience which is the better practice, the application of large or small quantities at one time.

Fourth: Unless one measures water at least approximately, he frequently applies quantities for in excess of what his land actually needs. This does not mean that all of his land gets too much water, but certain parts get very much more than they need, while other parts do not get enough; and the total amount applied, if distributed uniformly, would frequently cover his land to a surprising depth.

Smithfield, Utah.

Utah Farmer:

Gentlemen:—Please give some way how the farmers can keep beet tops so they can be fed to cattle in the winter? Please advise in your paper. Do you think they would keep with a layer of straw and a layer of tops until it became a large stack.

James N. Read.

Answered by Dr. W. E. Carroll.

In Germany greater use has been made of beet tops as a feed for livestock than in this country. In Germany there is a fairly common practice of piling alternate layers of beet tops and straw into a large pile and covering the entire mass well with dirt. The straw seems to absorb the excess moisture from the beet tops and the entire mass comes in a fairly feedable form. Different men have tried to put the beet tops in a silo but the mass comes out so sloppy and nasty that it is very unsatisfactory. The piling with alternate layers of straw is probably the best method of keeping that has been devised to the present time.

Utah Farmer:

How does the Holstein-Friesian cattle and the Durham cattle do when crossed? And do you think they would be good beef and milch cows when crossed.

Don Covington.

Answered by Dr. W. E. Carroll.

The question of trying to get one breed of cattle which will produce both

a large quantity of milk and splendid beef is practically as old as live-stock breeding. Crosses of all conceivable sorts have been made in the attempt to attain this end and they have all without exception proved failures in the long run. The so called dual-purpose breeds of cattle have not been made by crossing but by selecting in any one breed. The domestic cow has two functions, producing meat and making milk. These functions seem to be more or less antagonistic, that is where the animal produces meat readily the milk-giving function has not developed to a very high extent. And where milk-giving seems to be the primary object of the animal they do not fatten readily nor put on flesh. Even in the so called dual-purpose breeds of cattle where an animal is an exceptionally good milker she is as lean and angular and sparsely made as the dairy cow, showing that the two functions cannot be well developed in the same animal. The difficulty with the average farmer who wants a dual-purpose cow is that he never counts the cost of raising the calf to two or three years old where he usually sells it. Unless conditions are very exceptional it will cost \$40 to \$65 to raise an animal to two or three years of age. Subtract this cost from the selling price of the animal at this age and there is very little left for profit, in fact a good dairy cow could have her calf killed the day it was born and make more actual profit than the profit received from a dual-purpose cow in both milk and the young by the time the cost of raising the calf is considered.

For the average farmer the only question which is debatable is whether he wants to do dairying work or whether he wishes to raise beef. If he wishes to be a dairy man and has a market for dairy products, there is no question but that he can make more money by getting a dairy bred animal even though the value of the calves is not considered at all.

PIG TROUBLES

Utah Farmer:

About the middle of September one of my pigs became very sick. It refused to eat and wanted only to lie down. I doctored it and soon it became somewhat better and began to eat. It afterwards broke out with sores and is now scaling off. As it began to get better and eat, it became very lame in its left front leg. I cannot ascertain what is the cause of the lameness.

What is the cause of the lameness and how can I assist in overcoming it? How long ought it to be before it is fit to be killed for the market.

Answered by Dr. H. J. Frederick.

It is very difficult from your description to determine what is causing the trouble with your pig. In order to be able to diagnose the trouble a detailed description should be given of the way the animal acts, the feed it has been given, and the kind of place in which it is kept. It is possible that your animal has been affected with some skin disease and is now peeling off. The lameness may be due to articular or muscular rheumatism. This is usually manifested by a lameness in one or more of the limbs, a stiffness in the gait, and sometimes extreme pain accompanies any of the movements of the animal. This is a condition which is very dif-



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difficult to treat after being acquired. Preventative treatment is of the most importance. Comfortable quarters and avoidance of exposure is absolutely necessary as well as avoiding dirty, damp or draughty hog houses. Provide a dry, warm, and comfortable place for sick animals. A sloppy diet

is indicated. Selicylate of soda should be given. This is one of the drugs used a great deal for this trouble. The dose is about 20 grains on the feed or as a drench three times a day. There are quite a number of other drugs that are sometimes used, but it is quite difficult to get the hog to take

medicine of any kind and in most instances drenching is out of the question. The animal should be fit for butchering after it has scaled off and is seemingly in healthy condition again. If there is any particular discharge from the skin the animal should not be used for human food until this is entirely overcome.

(From the above you can see how necessary it is to give as much detail as possible describing with all information you can give in order that the correct answers may be given in every instance.)

Utah Farmer:

When is the best time to transplant rose trees?

During the early spring.

How do you recommend the more tender varieties of rose trees be cared for during our winters?

Place a heap of manure around each rosebush in the fall. This should be left on until the following spring—about April, according to weather conditions. At this time spread the manure and dig it down around the roots. It is best to prune the bushes at this time by removing all weak shoots and cutting the remaining shoots back two-thirds of their entire length. This cut should be made directly over a bud turning outward.

Supt. of Greenhouses, U. A. C.

ISOLATION OF A CASE OF COMMUNICABLE DISEASE.

The care of a case of scarlet fever or other communicable disease, so that it may not spread to other people is not only far more effective today than it once was but far less burdensome and inconvenient for the family as well. Except in the case of smallpox, the members of the family who do not come in contact with the patient can continue their usual business unless such business brings them in close contact with children. A room as much apart from the rest of the house as possible should be set aside for the patient and the nurse or mother or attendant. Disease germs will not fly through the air from such a room; they can only be carried on the hands or clothing of the attendant, or on cups, spoons, and other objects taken out of the room.

The first of all rules for isolation then is that the attendant and the physician and anyone else who enters the sick room and touches anything there should thoroughly wash the hands on leaving the room, and if there is danger of the clothing being soiled as by the coughing of the patient, a special gown should be worn and left in the room on going out.

The second rule is that objects in the room handled by the patient or by the nurse while she is attending the patient should not be taken from the room until they have been disinfected; and it is important during the course of the disease to keep the sick room itself as free as possible from cross infection. In the case of such diseases as scarlet fever and diphtheria, discharges from the mouth, throat and nose, and eyes and ears should be disinfected with particular care.

If these precautions are taken during the course of the disease, infection will be checked, and in most cases nothing more need be done at the close of the disease than to give the patient a bath and thoroughly cleanse and disinfect the room and its contents.

AGRICULTURAL LEADERSHIP

The man who produces double the customary crop assumes a leadership that brings responsibilities. His farm becomes an object of interest. When his work becomes known and his methods discussed he gains fame as a model farmer. Others want to see and learn, and then do likewise. If visitors are welcomed to his farm and his confidence they are bound to look with critical eyes. They expect to see everything about the farm in an ideal condition commensurate with the bumper crops and attendant prosperity of which they have heard. If the farm work is shiftless in some particulars, if the fence rows are weedy, the hedges untrimmed, the lawn ragged, the buildings unpainted, or the garden a weedy wilderness, the visitor who is naturally neat revolts from all he sees. If big crops accompany such slovenliness he will be content with his accustomed methods and results.

The man of one idea may thus have a bad influence. If he thinks only in terms of soil fertility and resulting crops, and overlooks self-respecting neatness, his example loses its force. It is only too true that many soil robbers are very neat workmen. They can not be reformed by a neighbor whose place is not well kept, even though by soil feeding his fields may yield abundantly. The man who has a reputation for big crops should therefore study his farming to see if it will bear close critical inspection in its various details.—Breeder's Gazette.

THE COMMON THINGS

F. L. Pinet in the Kansas Teacher.

Has it ever occurred to you that the most beautiful things in life are the common things—things which a pauper may possess as well as prince, things which plowman and poet may claim with equal right? For is it not the Sea, the sibilant-whispering Sea, whose lips kiss the sands of a thousand shores, and in whose passionate embrace are nestled myriad argosies,—is not the Sea, with its wealth of wonder and its mystery, the heritage of all? Is not the splendor of the Sun yours and mine as well as Shakespeare's? Shall not the serenity of mid-summer skies bring us solace as well as to him who "sitteth in the seats of the mighty"? Let a man but have eyes and he shall see beauty everywhere. Night, with her train of stars, shall comfort him. The music of the summer rains shall fill his soul with gladness, and the song of the lark shall give him kinship with the Infinite. He shall have fellowship with the grass and the flowers and the trees, and the slow-winding river and the majestic mountain shall be of his brotherhood. Before his eyes shall pass the scarletclad glory of Autumn, and always for him in the Loom of Life there shall be wrought a wondrous tapestry, woven anew each day from the warp and woof of common things, but of imperishable beauty, because designed and patterned by a Weaver whose name is God.

WHO AM I?

I am more powerful than the combined armies of the world.

I have destroyed more men than all the wars in the world.

I am more deadly than bullets and I have wrecked more homes than the mightiest of siege guns.

I steal, in the United States alone, over \$300,000,000 each year.

I spare no one, and I find my victims among the rich and poor alike: the young and the old, the strong and

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Quick Work

Flying Dutchman
Wide Spread
Spreader



Keep your land fertile—save time, labor and manure with the Flying Dutchman, a practical, low down, end-less apron, wide spread spreader. It has up-to-date exclusive features which are worth while.

Double Beater, with second beater running at high speed, gives manure second handling, pulverizes it more thoroughly—makes a wider, more even spread.

Separate Direct Axle Drive for Both Beater and Apron

prevents undue strain on beater mechanism as is the case on spreaders having apron driven through beater—insures reliable power, durability, freedom from trouble and repair expense.

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Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Vehicles, Wagons.

Unusually Light Draft is secured by short wheel base, hitch close to the load, wheels well under the load, full equipment of roller bearings on driving gear and beater mechanism.

The Flying Dutchman is easy to load, stands low with ample clearance between ground and lowest part of apron.

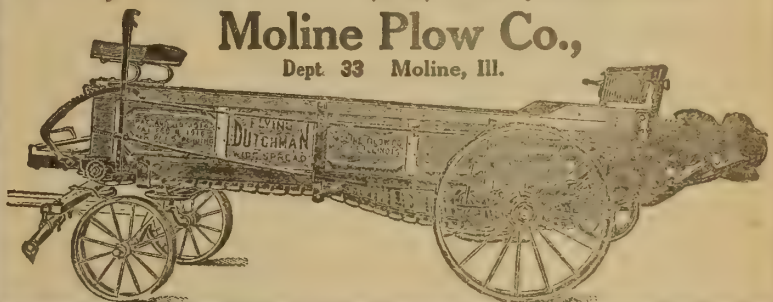
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Ask your Moline Dealer to tell you about this spreader, or write us for illustrated literature.

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I lurk in unseen places and do most of my work silently. You are warned against me, but you heed not.

I am relentless. I am everywhere; in the home, on the streets, in the factory, at railroad crossings, and on the sea.



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HOME

RECIPES FOR APPLE PIES

Apple Pie.

Line a plate with good paste. Fill with thin slices of good cooking apples, sprinkle with one-half cup of sugar which has been mixed with a heaping teaspoonful of flour and a crust and bake in moderate oven for half an hour.

Ohio Apple Pie.

Serve hot apple pie with cream and maple syrup.

Kentucky Pie.

Steam six large tart apples and run them through a colander; stir in while hot one tablespoonful of butter. When cool stir in the yolks of three eggs, and add an ounce of one lemon and one teaspoonful of sugar, which have all been beaten together. Cover a deep plate such as you use for squash pie with good pie crust and fill with the mixture, baking in a moderate oven 40 minutes.

English Apple Pie.

Butter a shallow agate dish. Select one that is deeper than a pie plate. Fill the dish with sliced apples; sprinkle with a cup of sugar, half a teaspoonful of salt and a little nutmeg. Put over it two teaspoonfuls of butter in bits; add three tablespoonfuls of cold water. Cover with good paste and bake 40 minutes. Serve with cream.

Fresh Apple Custard Pie.

To one pint of apple sauce add one quart of sweet milk, four eggs, one tablespoonful cornstarch, pinch of salt, one-fourth grated nutmeg, one tablespoonful melted butter, juice of one lemon and grated rind of half a lemon and bake undercrust only.

Apple and Coconut Pie.

Line a deep plate with pastry. Pare and grate apples, sweeten and flavor to taste with sugar and cinnamon or lemon. Sprinkle the pastry with well-shredded coconut, fill out with the apple mixture and bake. When almost done sprinkle with coconut and do not leave in the oven long enough to brown.

Date and Apple Pie.

Line a plate with a rather rich crust; fill in with a mixture of chopped dates and apples. Sprinkle over half a cupful of sugar and one teaspoonful cinnamon; add two tablespoonfuls of water; cover with a top crust and bake about half an hour in a moderate oven.

Victoria Pie.

Stew tart juicy apples until soft and rub them through a sieve; to one cupful of hot sauce add one tablespoonful of butter, one cupful of sugar, the grated rind and juice of one half a lemon, two egg yolks and one-half cupful sweet cream. Line tin with paste and sprinkle over it one-half cupful each of chopped almonds and seeded raisins. Pour over them the mixture and bake. Then cover with a meringue made of the lightly beaten whites of two eggs and two tablespoonfuls of sugar flavored with vanilla. Brown in a quick oven.

French Pie.

Fill buttered pie pan nearly full of sliced apples. Mix with one cupful of sugar and a little nutmeg. Sift together one cupful of flour and one teaspoonful of baking powder. Add yolks of two eggs, one-fourth cupful of milk and one tablespoonful of butter. Spread on apples and bake in a moderate oven for 20 or 25 minutes. For icing take the whites of two eggs,

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Saves half the time.

Cuts out back-breaking labor.

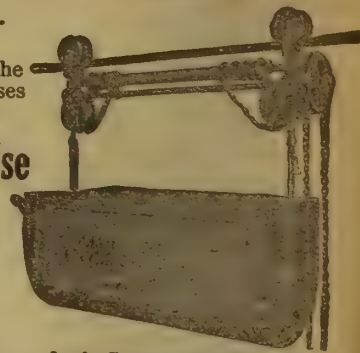
Makes the daily task of barn cleaning less disagreeable.

Saves the full value of wet manure and increases the fertility of your farm.

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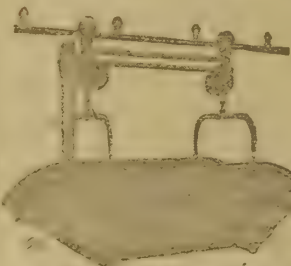
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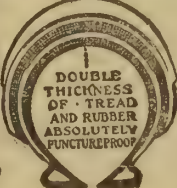
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Tires Tubes		Tires Tubes	
30x34 in.	\$ 8.50 \$2.50	36x44 in.	\$17.45 \$4.50
30x34 1/2 in.	16.25 3.10	36x44 1/2 in.	21.25 5.50
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34x38 in.	15.75 4.20	37x45 1/2 in.	23.60 6.20
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What's The Reason?

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"NEVER-RIPS" and "MADE-RITES"

Isn't it likely that this army of working men have found some features in them that make them superior to other makes? Find out for yourself.

Try a pair of "NEVER-RIP" overalls and a "MADE-RITE" shirt next time you buy work clothes. Then you'll know how much more comfort and service there is in wearing

SCOWCROFT'S

"NEVER-RIPS" OVERALLS

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"MADE-RITE" SHIRTS

Jno. Scowcroft & Sons Co., Mfgs.

Ogden, Utah.

one cupful of confectionery sugar, lemon juice or extract. Spread on pie and brown.

CUP CUSTARDS

One may use cold milk or boiled. The advantage of the hot milk is that the custard cooks more quickly, a true advantage. To each cup of boiled milk add one egg slightly beaten and two level tablespoons of sugar. Four will make it more attractive, but not so wholesome probably for most children. Add just a bit of salt and a grating or two of nutmeg after it is in the cup, or it may be flavored with vanilla. A piece of vanilla pod cooked in the milk for about twenty minutes makes a wonderfully dainty flavor. Beat the egg only till you can

lift a spoonful without strings. The finest custards are made of yolks only. Pour the mixture into buttered cups, set them in a water bath, which must not be allowed to boil, and bake until the egg sets, when the handle of a silver teaspoon inserted will come out clean.

For cracker pudding prepare just like the custard, then add three crackers rolled fine.

Soft Custards.

The following custard may be used over cooked fruit, as well as for many other things, and may thus induce a child to eat something he needs. Fruit is a valuable and necessary part of the diet, when given in the right combinations, of which jam or jelly or preserves on bread is about the worst—bad, very bad, because it overworks the digestion or puts too much labor in two places. This custard may be frozen or mixed with cream half and half for a splendid ice cream:

Whisk five egg yolks with two-thirds of a cup of sugar until when the whisk is raised the mixture falls in a beautiful smooth ribbon, then pour over it two cups of boiled milk, stirring constantly. Put in a double boiler and cook until mixture coats spoon, but do not boil. Flavor with vanilla when taken from the stove.

The careful cook may cook this in one-fourth the time directly over a bit of fire. If she leaves it a second too long and it begins to separate after she takes it from the stove, a little quick beating with an egg beater will make it smooth again.

Oatmeal Kisses

The stiffly beaten white of one egg, one-half cup of rolled oats, two tablespoons of sugar, a tiny bit of melted butter or none at all, a pinch of salt, and a few drops of vanilla. Drop from tip of spoon on well buttered inverted dripping pan, if you have no sheet iron cookie tin, and spread thin and round with a silver knife wet in cold water. Put the oatmeal in carefully, so as not to get the mixture too stiff when you can only make oatmeal rocks shaped like almond rocks, but less wholesome. Bake about twelve minutes in not too hot oven. A small egg white may not take all the half cup of oatmeal. Rolled oats only should be used, as these are partially cooked. The whole egg and additional oatmeal make what is called Scottish fancies.

EASY WAY TO PAINT STAIRS

When painting stairs that are much in use instead of putting boards down for treads paint every other step and the ascending and descending can be done on the unpainted steps. When the painted ones are dry the ascending and descending can be done on these and the remaining steps painted, thus saving scratches made by treads.

TO PREVENT WINDOWS FROM STEAMING

Clean the glass occasionally with a cloth moistened with pure glycerine, wiping it so as to leave only a trace of the glycerine adhering to the surface, this on the inside only.

TO TAKE OUT MARKS FROM MAHOGANY

The whitish stain left on a mahogany table by a jug of boiling water or a very hot dish may be removed by rubbing in oil and afterward pouring a little spirits of wine on the spot and rubbing it dry with a soft cloth.

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About the Price of Sugar Beets for 1917

The directors of the Utah-Idaho Sugar Company held a meeting and it was decided that new contracts should be entered into with farmers for next year's planting on the basis of \$7 per ton for beets running not less than 15 per cent in sugar content. General Manager T. R. Cutler gave out the following statement.

"The new contract at \$7 per ton authorized for the year 1917 marks the highest price ever paid for beets in Utah and Idaho. These contracts will take the place of all others proposed, and will be extended to every state where the company has factories, including Nevada, Oregon and Washington, even though in these states the farmers have agreed to raise beets for \$5 per ton. The company will treat all alike regardless of prior contracts, our desire being to show the beet growers that we wish to be fair with them and to share with them the prosperity that has been brought about by war conditions. Our agricultural men will commence contracting in all the beet-growing districts at once."

The Amalgamated Sugar Company also the Layton Sugar Company will make the same prices for 1917.

George Austin, the Utah-Idaho agricultural superintendent said that the action of the board in raising the price of beets to \$7.00 per ton would be most gratifying to the farmers. "I know personally of many farmers," he said, "particularly in Garland, who will double and some will treble the beet acreage next spring as a result of the raise in price. Why shouldn't they? In Utah this year the average is 13 tons to the acre. If our farmers get the same average next year (and they may get more) it will mean \$7.00 per ton or \$91.00 an acre; as it does not cost them more than \$45.00 to \$50.00 an acre to produce the crop, they are left with a very handsome profit. I look to see a tremendous increase everywhere next spring in the beet acreage.

Farmers have been holding meetings and discussing the question of signing contracts for 1917 at the 1916 price. A movement is on foot to farm a state organization.

In several places where beet growing is practiced farmers have been discussing the question of what it cost to produce a ton or acre of beets.

The following statement has been issued by the Utah county farm bureau committee, appointed to investigate and report on the cost of sugar beet production, sugar production, and prices of sugar and sugar beets:

"The sugar investigation committee of the Utah county farm bureau, composed of W. J. Chadwick of American Fork, Wm. V. Price of Provo, Lorenzo Arygle of Lake Shore with R. W. Creer of Spanish Fork as secretary, has spent six months on a very thorough probe into the farmers' side of the beet question. Many records on the costs of growing sugar beets were taken in Utah county; others were secured from Salt Lake, Weber, Boxelder and Cache counties. The data on the cost of producing sugar was obtained from reports of the sugar committee on the house of representatives at Washington. All the data given herein comes from unimpeachable sources, and reveals the appalling inequality of profits as made by the sugar companies and by the beet growers.

"The average cost of growing each acre of sugar beets in Utah in 1915 was \$56.46 for a twelve-ton crop. Twelve tons was the average yield for Utah in 1915.

"The price received was \$5.10 per ton—at total of \$61.20 per acre. This left a net profit of \$4.74 per acre or 39½ cents per ton to the farmer. According to testimony given by the Spreckles Sugar company of California, this concern produces sugar at a cost of \$2.70 per hundred. It costs the Oxnard factory of California \$2.81 per hundred. E. W. Combs of the Great Western Sugar company of Colo., testified that it costs his company \$2.56. This is an average of \$2.69 per hundred for the production of sugar—the cost of beets, labor, interest and overhead charges all considered.

"The average price received by the Sugar companies of Utah last year for their sugar was \$5.75 per hundred. When we subtract the cost of production, \$2.69, it left a net profit to the sugar company of \$3.06 per sack. Three hundred pounds of sugar are made from one ton of beets in Utah. This made them a net profit of \$9.18 on each ton of beets they bought, while the farmer made only 39½ cents per ton.

"According to the testimonies of the combined beet factories of the United States given before the sugar committee of Congress, it cost them \$3.54 to produce one hundred pounds of sugar. On the basis of this figure they made \$2.21 net profit per hundred or \$6.63 per ton of beets.

"At the present time sugar is being sold by the sugar factories at \$8.15 per bag in Utah and \$7.65 per bag on the river market. Taking \$7.75 as the average price, it leaves them a clear profit of \$4.21 for each sack or \$12.63 for every ton of beets they purchase from the farmers. This on the basis of their highest cost of production figures, \$3.54. Taking the low average, \$2.69, they are clearing \$5.06 per bag, or \$15.18 per ton of beets."

The Utah county farm bureau is asking the co-operation of all beet growers in Utah in securing a fair and reasonable profit from beet growing. A committee representing all the beet interests of Utah will meet in Salt Lake City in the near future to discuss contracts for 1917.

RELIABLE FARM BARGAINS.

460 acres in the center of the Bear River valley, ¼ of a mile from the railroad station and beet dump. All fenced and surrounded by first-class farm land. This property is all covered with heavy sage brush and all subject to irrigation at a very low cost. Can be had for \$35 per acre. Ten years to pay at 6 per cent interest.
List 1.

40 acres one-half mile from Elwood station. Raised first-class sugar beets this year. On the main county road. \$115 per acre. Terms.
List 2.

80 acres one mile from the center of Tremonton, on the main highway. This property has been farmed for 25 or 30 years, one of the oldest farms in the Bear River valley. Lands immediately adjoining this have been sold for \$150 to \$200 per acre. This man lives in California and has authorized us to sell at \$125 per acre.
List 3.

We have 40, 80 and 160-acre tracts for sale in southern Idaho with first-class water right. Some improved and some unimproved that we can sell for small payment down and ten years on the balance at 6 per cent interest.

640 acres first-class dry farm land, 1½ miles from the railroad station. 180 acres planted to summer fallowed wheat. \$15 per acre, on easy terms.
List 4.

We exchange homes for farms and farms for city homes.

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10-dose pkg. Blackleg Pills, \$1.00
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The Cutter Laboratory, Berkeley, California

gather the fruit.

I believe in a clean kitchen, a neat wife in it, a clean cupboard, a clean dairy, and a clean conscience.—American Fertilizer.

Live Stock

BABY BEEF.

By Howard R. Smith.

The term "baby beef" is sometimes applied to cattle which are well fattened at the age of ten to sixteen months and are sold weighing from 600 to 1000 pounds each. Good beef percentage on both sides is quite necessary in this case as animals with some dairy breeding are inclined to grow too much in frame and not enough in flesh during early life. At the same time, the cow must be a fair milker to give the calf ample nourishment and a well rounded appearance, showing plenty of milk fat at weaning time. Grade Shorthorn cows bred to a low-down, blocky Shorthorn, Hereford or Angus sire are excellent for this purpose. The calves are usually allowed to run with their dams or nurse twice each day and are well

started on grain feeding before being weaned, so that the milk fat will not be lost. The calves are allowed the whole milk during the entire period of lactation, and are given all the grain they want with an abundance of good hay until ready to sell. They must be well bred and well fed to make good baby beef. Fattening at an early age has been profitable during recent years as these young cattle that have a high finish have been bringing as much per hundred as the older, heavier cattle of quality. This may be explained by the fact that when beef is high in price, the average consumer calls for a small cut, which can be taken to much better advantage from a small carcass. The cost of production on this class of cattle is less, because the younger the animal the less feed is required for body maintenance and a greater proportion of the ration therefore goes to produce flesh.

Baby beeves can be produced to advantage on good sized farms where some of the land is better suited for grazing than for crop growing and where the cows can be wintered cheaply on hay and other roughage without grain, calving during the early spring and summer. The number is limited by the size of the farm and feed available rather than by labor conditions, as the calves do the milking, and the cows are allowed to run loose in sheds or well protected yards during the winter.

The calves fatten well on milk and grass during the summer, to be finished the following spring or summer on corn or barley, oats, clover or alfalfa. Silage can also be used to excellent advantage if available, and a small quantity of oil meal or cottonseed meal will usually hasten the fattening process. They should have about all the grain they will eat, which will approximately equal in weight the amount of good roughage consumed. With breeding stock of good quality, economically wintered, very satisfactory profits can be made at the prices which have prevailed during the past four years on well finished young beef. Calves which have been allowed to have all the milk from their dams are as a rule more profitable when finished as baby beef than when carried over as two-year-olds. Plenty of whole milk give the calf a high condition of flesh which should not be lost by later feeding as the cost of grain for finishing purposes is much less where the calf has a good start on whole milk. If two calves are allowed to nurse one cow and if part of the herd is milked, from which revenue is received from the sale of butterfat, the profits are usually the greatest. With a good class of milking Shorthorns this plan can be followed successfully.

LET YOUR COLTS BE WELL BORN

Dr. W. E. Carroll.

The two chief factors which determine the profits realized from the horse breeding business are the cost of production and the quality of the product put on the market. As land values increase, taxes automatically become higher, and this together with the increasing cost of labor, makes the feed and care given the horse more expensive. These factors are so completely independent of the horse breeder that he has little control over the cost of production. This statement is not intended to convey the idea that no account should be taken of costs, or that costs do not vary. Quite the contrary. In fact, there may be sufficient difference in systems of

feeding and management to mean loss to one man and profit to another. The fact remains, however that with even the greatest effort the producer cannot lower the cost below a certain point, and that this minimum has been increasing during the past several years.

Since the cost of production cannot be controlled, there remains only one of two things for the horse breeder to do; go out of business because his profits have failed, or raise the quality of his product to such a point that its selling price will justify his efforts.

The quickest and most economical way of accomplishing this latter end is by using the best sire obtainable. Every colt should be given the privilege to be well born, but this cannot be done as long as the haphazard methods practiced in the State in the past continue. Don't place a lifelong handicap on a colt before he is born by breeding his mother to an inferior horse.

Another warning to be read from the signs of the times is that only the best mares should be permitted to raise foals. This is just as important as the use of a good stallion, for sire and dam each have an equal influence on the offspring.

ECONOMY IN FEEDING

Experiments Give Basis for Great Saving.

With hay at twenty-two dollars a ton, and sometimes unobtainable at that, a series of results obtained from extensive experiments in horse feeding conducted by the Utah Agricultur-

al College, became of the greatest importance. It has been found that horses given free access to alfalfa hay of good quality will consume twice as much as they need. This is true of work horses as well. A college team of horses, weighing 1400 lbs. each and having free access to alfalfa hay, each consumed daily 40 pounds of hay, in addition to a light grain ration. They were troubled with colic and other digestive troubles. They were poor workers and needed constant urging with the whip. This ration was reduced from day to day, until finally each horse received but twenty pounds of hay with the same amount of grain. The change in the horses was remarkable. All digestive troubles disappeared, there was no more colic, and the driver threw away his whip. Not only was a saving in hay effected, a very important item with high priced hay, but more work was done by the horses, and they were in less danger from sickness.

Dr. W. E. Carroll, of the Utah Agricultural College, gives the following as an economical daily ration for horses weighing from 1400 to 1500 pounds, doing moderate work: twenty pounds of alfalfa and five to ten pounds of grain, oats or bran and shorts mixed in equal parts serving equally well for the grain. Most of the hay should be fed at night, say about twelve to fifteen pounds. Five to eight pounds of hay may be fed in the morning, with none or very little, at noon. Very little grain should be fed at night a little more in the morning, and most at noon.



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Successfully Operate On:

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Important Dealer Service: When you buy an engine from your dealer, you deal with a local representative of the manufacturer. He shares their responsibility. He stands behind the engine he sells. He's responsible to you. He's at your service to see that you are satisfied. And he's as near you as your telephone any time you want him.

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That's the story in a nutshell. This new "Z" Engine puts dependable, efficient, economical "power" within the reach of every farm.

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Simple—Light Weight—Substantial—Fool-proof Construction—Gun Barrel Cylinder Bore—Leak-proof Compression—Complete with Built-in Magneto. Quick starting even in cold weather. Low first cost—low fuel cost—low maintenance cost. That's the "Z" engine.

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All Fairbanks-Morse dealers sell "Z" engines on a zone carload low freight basis. If you don't know the local dealer, write us.

THE PRODUCER'S OPPORTUNITY IN DAIRYING

(Continued from page 7)

sive dairy community unless it is conducting a cow testing association, or else its dairymen keep their own records. The producer's opportunity will never be fully realized until his dairy farm management is reduced to the point of his having a definite knowledge of the affairs of his business.

The Breeding Circuit is another evidence of dairy economy. A co-operative bull association provides for the joint ownership and use of high-class, pure-bred bulls. It enables a group of farmers to procure the best bulls obtainable and to continue their use for a longer period of time than usually obtains with the individual ownership plan. Our different breed associations have an opportunity presented to them in the matter of the community breeding circuit and the growth and development of the plan will be enhanced materially if they will take hold of it.

The marketing of our dairy products is a serious one and demands the attention of all real economists. The dairymen themselves can best solve the problem and the National Dairy Council furnishes the medium through which they can work.

Our prospects for a solution, however, are brighter today than ever before for a number of definite reasons.

Our means of transportation have been greatly facilitated during the

past five years. The automobile is no longer a luxury on the farm; it is one of the necessities. With it the farmer can put his product on the market in a fresh condition a few hours after it has been produced.

The time was, and not long since, when dairy farmers were widely scattered; they were forced to market their products as individuals, and no market could successfully handle the various grades of product and do it profitably. Today a large quantity from smaller areas is helping much to stabilize the market and furnish a higher price. Competition, too, within the industry has helped, and in our most thickly settled dairy sections, a farmer can decide whether he will market his butterfat or his milk and whether it shall be used as market milk for condensed milk or to be manufactured in cheese.

The thing most needed in this problem of marketing is for the producer and the dealer to get together. It is unfortunate that milk producers find it necessary to "strike" in order to have their rights recognized. The financial loss to the business and the suffering brought to the thousands of children is unnecessary.

The milk dealer is necessary in the general scheme of marketing, but he must appreciate the producers' economic problems. The producers occupy a big field—one extensive enough to occupy all of his time and talent, and I doubt the feasibility of his encroaching into the marketing field.

The dairy farmer has recently received additional attention at the hands of Congress. The Federal Government has come to the rescue with a cheaper money and on easier terms, but it is prefaced with the injunction "You must co-operate."

The plan may not provide an easier way for the farmer to get money, but it impresses upon him the very lesson that has been taught for years—that of co-operation. Co-operative breeding associations, co-operative cow testing associations, cooperative marketing, co-operative borrowing—all these forms of co-operation are giving the farmer opportunities he has not heretofore enjoyed. They are enabling him to join hands with his neighbors and to build, more permanently for himself and a bigger industry for the Nation.

HE GUESSED WRONG

A small boy carrying a basket got on the train the other morning bound for Mapleton. He found the car full and stood in the aisle as if uncertain what to do. A gentleman who was occupying a seat with his grip beside him, put the grip on the floor and the boy's basket on the rack above his head and offered the lad part of his seat. Presently the gentleman felt something trickling down on his head from the basket above.

"My boy," said he, "your pickles are leaking."

"Them ain't pickles," replied the boy. "Them's puppies."—Ida Grove (Iowa) Record.

THE TIGHT-WAD

A farmer boy and his sweetheart drove into town and happened to stop near a popcorn stand.

Presently the girl said: "My, don't that popcorn smell good!"

"Yes," said the gallant youth, "and I'll drive closer so we can smell it better."

Money to Loan On Farms

LIBERAL TERMS

If you need money for additional improvements to buy livestock or any other purpose let us help you.

Because of our long experience in the land business, we are prepared to give you the best service and protection.

Come and see us or write.

Kimball & Richards

"Land Merchants"

The firm that is known for the "liberal loan."

56 and 58 Main Street
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Ask your neighbor what she thinks of Utah-Idaho Sugar. We are quite sure she will praise its quality. She knows what splendid results she has obtained in her cooking, baking, preserving, canning and jelly making by using this perfect sugar.

We prove our claims by analysis and practical tests. We know Utah-Idaho Sugar to be the equal of any sugar in the world. After you have used the first sack, you will prefer it. Be sure when buying sugar to ask for—

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Following round trip fares will apply from Salt Lake City to

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Omaha or Kansas City	40.00
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Tickets on Sale,
Nov. 25, 28; Dec.
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90 days.

Proportionately low fares to many other points.

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"Let's go back east to old scenes and old friends for a good old fashioned holiday visit."

axes to the short slope on chisels and gives a good cutting edge, besides seissors. Grinding flat on the surface wasting and injuring the metal.

THE FARMERS' MARKET PLACE

For the Buyer

For the Seller

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

Gem Herd of Improved Chester White Swine

This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions of the World's Fair held at Frisco this last year. Both Sire and Dam, is still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale at all times.

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White Leghorn cockerels from males with mothers laying 250 or more eggs a year—mated to females laying 200 and more. A few of these cockerels at \$5.00 each means less than half their value. Get yours now.

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FOR SALE

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DR. R. A. PEARSE,
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JERSEY BULL, "Bucky King," reg. 19533; 3 years old. Price very reasonable. A. O. Smoot, Provo. Reference. Bull at our farm at Springville.

UTAH HATCHED WHITE LEGHORN EASY CHICKS \$11.00 PER 100

Circulars, order-blanks, etc., upon request. Candee Colony Brooders carried in stock.

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One of the finest large modern new homes in Salt Lake City, including complete and beautiful furnishings. Red pressed brick and red sandstone construction. New and thoroughly modern throughout. 7 rooms on ground floor; space for 5 rooms on second floor. Full cement basement containing complete laundry room, combination living room and dancing hall, \$650 Vacuum cleaning system, Hot Water Heating plant, fruit room, coal and furnace room.


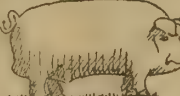
Home is finished throughout in selected Oak, Mahogany and Circassian Walnut finish. Handsome electric fixtures made to order. \$1,000 worth of Oriental rugs. Built-in buffet, dressers, bookcases and cabinets. Elegant tile bathroom, four fireplaces. Spacious porches. Plate glass windows.

The large landscaped grounds, covering an acre and a half, are unsurpassed in the state. Beautiful terraced lawns, thousands of flowers, shrubs and trees; tennis court; garage; summer house; pergola and fences.

A beautiful home in every detail, well designed and substantially built. Located in a modern restricted home district. Owner finds home too large and wants to build smaller home in same location. Price complete with furnishings, \$35,000. Will consider first class farm property as part payment.

Write to the OWNER at 1354 Stratford Avenue, Salt Lake City.



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Boars chuck full of Grand Champion Breeding. Bred the same way as our Utah State Fair Winners. We have a great lot of top spring Boars and are offering them at bargain prices. Every Boar guaranteed to please or money refunded. Write us today.

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BABY CHICKS

We are now booking orders for Spring Delivery in White Leghorns, Brown Leghorns, R. I. Reds, Barred Rocks and Black Minorcas. Anconas also.

THE ORLAND HATCHERY

Orland, Glenn Co., California.

Barred or White Rocks, White Wyandottes, Layers, Winners. Choice cockerels, \$3.00 and \$5.00. Satisfaction or money back. 1733 Ranch, Box 117, Kearney, Neb.

Wanted to hear from owner of good farm for sale. State cash price and description.—D. F. Bush, Minneapolis, Minn.

Farm Loans

CURRENT RATES
FAVORABLE TERMS
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Send all orders to
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YOU NEED THIS FOOD

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40 ACRES EACH.—RICH, DEEP SOIL, near Bellevue, Idaho, on "Wood River branch O. S. L." HONEST, INDUSTRIOUS MEN can get one of these ranches and begin life of independence. The land is rich sandy loam with plenty of water. Daily mail service. Splendid climate.

See us at once and be convinced that of all land offerings this is most tempting. Call OR WRITE.

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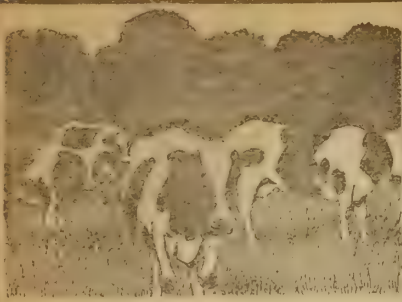
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More milk—richer milk, is what will increase the profits of dairymen. Your cows yield in proportion to the quality and adaptability of their diet.



—the well balanced, highly nutritious feed will get results for you.

FREE—Send for bree booklet—"Feeding for Results." Contains a lot of information and some carefully collected data which will interest you.



Utah Cereal Food Co.
Ogden, Utah

SWEET CLOVER MAY PAY IN THREE WAYS

Honey, hay, and seed—three crops from the same acre—are the things that make white sweet-clover a promising forage crop for use under some conditions.

Sweet-clover will do well on lands which are wet, dry, hard or sandy. Two crops of hay, yielding about four tons an acre, may be expected under favorable conditions. Sweet clover seed sells for about \$12 a bushel. Four, six or even eight bushels an acre are not uncommon yields. One crop of hay may be taken off and the second crop allowed to mature for seed. The bees can get a big supply of honey while they are helping to fertilize the blossoms.

Sweet-clover is one of our earliest pasture crops, and pigs do almost as well on it as on alfalfa. Tests at the Iowa experiment station showed that they did better on sweet-clover than on medium red clover. When the pasture becomes short, they will eat the big tap roots down as far as they can dig. Of course, this kills the plant. The Iowa station reports that hogs will not root out the plants if their grain ration is supplemented with meat scraps or tankage.

Besides being a good hay, seed and honey crop, sweet-clover, a legume, enriches the soil. The fleshy tap roots go deep after water and nutrients, and besides adding nitrogen from the air they add more than a ton of dry matter in roots to an acre. Being a biennial, sweet-clover fits into some rotations much better than alfalfa.

Sweet-clover has its disadvantages. There is a characteristically bitter vanilla flavor about the hay. If cut late, the hay has a woody stem that will not be eaten by stock. When cut young, however, it approaches alfalfa's feeding value.

CITIES SHOULD SHARE IN COST OF MAINTAINING AND CON- STRUCTING COUNTY ROADS

A conspicuous example of what happens to county roads when a city, the center of heavy automobile traffic, fails to contribute toward the building and maintenance of country roads, is found in Spotsylvania County, Va., according to specialists in Road Economics of the U. S. Department of Agriculture.

The country districts of Spotsylvania County some years ago issued \$170,000 of 4½ and 5 per cent bonds to improve their county roads. Under the Virginia law, the cities of the State are not taxed for county purposes, although they may aid in the improvement of roads for a distance of 10 miles from the city limits if the city council so elects. The city of Fredericksburg, in Spotsylvania County, however, contributed no part to the financial burden of maintaining the county roads. The heavy automobile traffic emanating from that point has proved to be a very destructive element to the county road system, and it was found that rapid deterioration was taking place in the county roads, and insufficient funds existed with which to meet the situation. The county authorities, accordingly, established toll gates on the principal roads and sufficient revenue thus was derived, not only to maintain the roads but actually to extend their construction a short distance. This reversion to a system long since abolished by most countries was partially due at least to the fact that the city in this county

Farmers, Ranchers, Stockmen

NOW IS THE TIME TO REPAIR THE OLD FENCES AND BUILD NEW ONES.

Do it the new way, the cost is but a fraction of the old. Stretch the wire on Chicago Steel Posts and apply—

THE UNIVERSAL FENCE STAY

"The Fencer's Friend"

"Wires Cannot Spread"

"Stays Cannot Slip"



No. 1 Stock Proof Cattle Fence with Stays

No. 2 Cattle, Sheep and Hog Combination Fence with Stays

Willow and Oak dancers cost from 5c to 10c and serve temporarily. The man who says they cost nothing counts not time, labor, nor material. A ranch with good fences is a credit to the owner and will attract buyers. While the poor fence stops them at the gate.

A Rod of perfect Hog fence made with Barb Wire and these stays costs 30c. Made in all sizes. Regular 18 inches, 36 inches and 42 inches.

You see it before you buy—We deliver it before you pay.

Drive twenty-one Steel Posts while digging one Hole for Cedar. Build a mile a day.

Prices F. O. B. Salt Lake.

UNIVERSAL FENCE STAY CO.

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Thomas Austin, Pres. John Dougan, V. Pres. Jas. A. Hooper, Sec. & Treas.

VISIT THE EAST AND YOUR OLD HOME TOWN "Home Visitors" Excursions

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Sale Dates Oct. 21, Nov. 8-25-28, Dec. 20-23.

RETURN LIMIT 3 MONTHS

For rates, time tables and full particulars see Agent Salt Lake Route or write

WM. WARNER, A. G. F. & P. A.
Salt Lake City Utah.

had contributed nothing to the upkeep of the road which residents of that city use extensively for automobiles.

The writers of the report suggest in view of the very rapid development of motor vehicles in the past decade and the prospects of much more widespread use of this means of transportation in the future, the desirability of making provisions so that the

cities may aid in the construction and maintenance of roads in the surrounding territory.

Try getting the boys interested in keeping the record. They will watch the returns from their favorite stock or crop and incidentally will learn some practical arithmetic. Find some way to keep a record of your business. It will pay in more ways than one.

UT Ag. sem.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 19 LEHI AND SALT LAKE CITY, UTAH DECEMBER 9, 1916



Courtesy of "Sugar".

SUGAR BEET FIELD ON THE SARATOGA FARM NEAR LEHI, UTAH

This is one of the best crops of sugar beets produced this year. There are twenty-seven acres in the tract and produced 704 tons of beets; just a little better than twenty-six tons per acre. Some of the field produced better than thirty tons per acre.

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Will answer your questions; help you solve your farm problems. Take the hardest problem on your farm ---sit down and write us all details about it and we will help you.

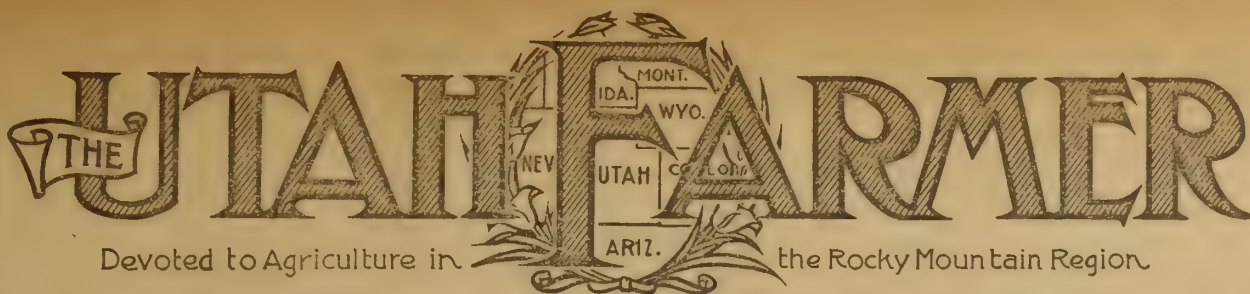
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Wants you to join the family. If you are already a member, now is the time to renew. Send your remittance to Lehi, Utah.

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VOLUME XIII.

LEHI, UTAH, SATURDAY, DECEMBER 9, 1916

No. 19

Cow Testing Associations

This fall, dairymen in the Star Valley of Wyoming have taken a progressive step toward placing dairying on an efficient and business-like basis by organizing a cow-testing association.

Wyoming, noted as the land of beef and sheep, has many farmers who are becoming aware of the fact that the proper type of dairy cow, too, has her place in the farming operations of that State. Last year farmers of the State imported approximately 500 head of grade and pure-bred Holstein cows and 20 pure-bred bulls.

Perhaps no section of the State is more advanced in dairying than is the Star Valley. This district, situated fifty miles from the railroad, is an inland empire of its own, but to overcome the serious problem of transporting crops to market, men are resorting to live-stock farming, and the more advanced farmers feel that dairying is the most successful phase of farm activity.

During the past year the three creameries of the Star valley put out approximately \$215,000 worth of dairy products. Cheese can be produced here excellently, the high altitude combined with the cool summer nights, making possible the production of a high quality product. Over a million and a quarter pounds of cheese were produced during the past eleven months.

Stock is on pasture five months of the year, very little grain is fed, and alfalfa forms the main source of cow feed during the winter. There are no silos in the Valley, but during the coming year several communities are planning to give silos a trial. Oats and peas will no doubt be the main silage crop, inasmuch as the altitude being high, it is questionable whether corn can be grown successfully. Last year on the farm of Mr. Thomas Blackert near Afton, a yield of 8,100 pounds of cured oats and peas was produced. This should yield approximately twelve tons of silage per acre. It is needless to say that with such productions, dairymen can use this sort of crop to good advantage as a means of providing succulence to dairy cows as well as providing a nutritive winter feed.

Lincoln County, in which the Star Valley is located, has a county agent. His headquarters are at Afton. Farmers of the County are making good use of his office. Mr. John E. Watt is the County Agent. He is eminently qualified to be of much assistance to dairymen of this district. This year the leading dairymen in the Valley met with him, and came to the conclusion that the time was ripe to organize a cow-testing association. One of the big problems of the association will be to determine just what profits can be made with the dairy cow and whether or not the

(Continued on page 4)

Some Drainage Questions

Answered by R. A. Hart.

"What effect will dips, sags or un-level places have on a drain?"

The carrying capacity of a tile depends partly on what is called the coefficient of friction. This factor varies with the smoothness of the tile walls and with the smoothness of the line as a whole. A carefully laid line of tile, true to grade, will carry more water than on having variations either in line or grade. Moreover, depressions in the grade usually become silted up so that uniformity is obtained but in the process the area of the conduit is reduced and this further cuts down the carrying capacity. Last, but not least, variations in the line of grade cause irregularities in the joints between tile and permit of the entrance of silt or sand, resulting in the clogging of the drain or even displacement of tile due to settling and offer an opportunity for the direct entrance of irrigation water with possible disastrous results. It is highly important that drains be laid true to grade and on good alignment and no money is lost by securing the services of a surveyor to see that this is done. It is impossible to get a good grade by "water grade" methods.

"Is there any special kind of tools to be used in laying of tile?"

Drains in the arid section are so deep that the various tilehooks, trench scoops, etc., so commonly employed in drainage practice, in the east are much more ornamental than useful. In the drainage of irrigated lands it is necessary to get right down into the trench to lay the tile. So far as trenching is concerned, however, long, skeleton ditching spades are much more satisfactory than the ordinary irrigation shovel although the latter is useful in cleaning up and forming the bottom of the trench to receive the tile.

"Is it advisable to lay tile in water of any depth, or should the drain be opened up to the outlet first?"

Trenching for drains in the irrigated section should always start at the outlet of each line and proceed up the slope so that the water will drain away as rapidly as developed. Much difficulty during construction is caused by water standing above the tile and it is much harder to secure a good grade.

"In laying drain tile, how can you do it so that roots will not grow in the joints and stop the flow of water?"

In laying out drainage systems, drain lines should not be located closer than 150 feet from water-loving trees such as willows, tamaracks, cottonwood, etc., and if it is impossible to avoid such location, these dangerous trees should be cut down. Rabbit brush, bunch-grass, etc., will naturally be removed from a reclaimed tract and therefore require no further consideration. Of planted crops,

(Continued on page 7)

Organize Loan Association

The prospects of long time loans at a low rate of interest has aroused much interest among the farmers. In several sections of the State, organizations have already been started. This one thing must be remembered that it is a co-operative work, and that the Federal Farm Loan Board will not consider the application of any farm loan organization in which the promoters have taken money from the farmers. They want the farmers to work together.

A rate of interest not to exceed six per cent, possibly lower, is the outstanding advantage to be gained for the borrower who makes use of these loan associations. One can secure a loan from five years to 35 years on the Amortization plan, paying interest and part principal semi-annually and annually. Loans can be secured for one-half the value of the land, and for one-fifth of the valuation of improvements. No loan can be made for less than one hundred dollars or more than ten thousand dollars.

Ten or more farmers in one locality who desire a loan amounting to twenty thousand dollars or more may form a loan association.

The Federal Farm Loan Board announces that the blank form of articles of association to be used in forming National Farm Loan Associations has been printed and is now ready for distribution.

If interested persons will address a letter to the Federal Farm Loan Board, Treasury Department, Washington, D. C., these articles of association will be sent. When they reach you, call a meeting of the prospective members of your association, adopt these articles, and have each member sign them and acknowledge them. Fill in the blank space at the top the name your association adopts.

Then, at your first meeting, elect a board of five or more directors and have the directors meet and elect a president, a vice-president, a secretary-treasurer, and a loan committee of three members. The loan committee may begin at once to value the lands of the members and prepare its written report of these valuations, which must be unanimous.

Do not send the signed articles of association to Washington, but hold them until the Federal land bank of your district is located. Then, write to the bank asking for forms which include an application for a charter. When these come, fill them out and send them, together with the articles of association and the report of the loan committee, to your Federal land bank.

Within a short time the Federal Board expect to be able to announce the boundaries of the 12 Federal land bank districts and the cities in which these banks will be located.

After these banks are located their stock will remain open for public sub-

Care of House Plants

By Emil Hansen.

There are but very few homes where flowers and other plants are not desired, and many attempts have been made by the housewife to raise plants and flowers of various kinds, which at times turn out to be a failure and the consequence is discouragement, while her neighbor may have many beautiful plants and flowers in her home.

The object of this article is to assist the lover of flowers and plants in propagating and taking care of house plants and in selecting the varieties of decorative house plants which will give the best results.

Propagation by Cuttings.

There are a great many varieties of house plants which can be propagated by cuttings, such as geraniums, fuchsia, various begonias, coleus, achyranthus and many others. The cutting taken from the mother plants should be selected with some care. For instance, if the mother plant is a plant that we use or want to use continually as a decorative plant, only a few side shoots or shoots from the bottom should be used for cuttings. But if the mother plant can be spared for propagation purposes it is so much better as all the top shoots can be used and these generally make the strongest cuttings. The mother plants are in no way spoiled, but should be cut back and new shoots will in the course of a few weeks be coming forth and making the bushy plants.

Some plants such as Begonia Rex and Begonia Credneris are propagated by cutting off the leaves. The leaf is laid flat on a table or board with the back turned up and cut into small pieces. Each piece of leaf must contain one fork of rib and the "hair" on the back of the leaf should not be touched or handled more than is necessary.

The length of the other cuttings should be about two to four inches, according to the strength of the same. A sharp knife should be used and the cut made just below a bud, and the bottom leaves should be removed with a knife. If broken off it leaves a wound which sometimes causes the cutting to rot.

All cuttings without exception should be planted in clean sand. The sand being free from any dirt or pieces of leaves will prevent the cuttings from rotting.

The time it takes for cuttings to root in the propagation bed depends on circumstances and the different varieties, and will vary from three to six weeks.

(Continued on page 14)

scription for a period of thirty days, after which the Government will buy all the remaining stock. The banks will then be ready to lend money for agricultural purposes.

Dairying

COW TESTING ASSOCIATIONS.

(Continued from page 3)

production of beef will be more profitable than dairying. Present conditions tend to point toward the dairy cow as the most profitable factory for converting the bulky farm crops into a condensed marketable product. Realizing that a cow-testing association should extend over a long time period, dairymen here took a very progressive step and not only organized the first association in the State but also the first in the United States in which all members agreed to stay in the association for a period of two years.

County Agent Watt's office will be headquarters for the association. S. E. Dramey is president; C. M. Holbrook, vice-president, Heber Burton, secretary-treasurer; and J. S. Reeve and O. Love, additional directors. C. A. Harder, a graduate of the Idaho Agricultural College at Moscow, has been employed as tester. He began work November 15th, 1916. We shall look forward with anticipation to seeing the results of his work in the Star Valley during the coming two years. It is hoped, too, that more communities will follow the Star Valley Pioneer Association's example in organizing their associations for a period of time longer than one year.

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We loan on first mortgages
on Utah farms or Salt Lake
city real estate at reasonable
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Prompt action and fair treat-
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More than a safe
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This bank endeavors to
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every customer.

**Walker Brothers
Bankers**

Founded 1859. "A Tower of Strength"
SALT LAKE CITY

The Wellsville Cow-testing Association has completed its third month's work. This month 381 cows out of 83 were on test. Of this number four cows made over 50 pounds of fat for the month, while 16 cows made over forty pounds and 56 over thirty pounds of butter fat for the month.

Mr. John L. Green's 8 year old grade Jersey leads in butter fat production for the month with a record of 60.5 pounds. This cow is in the 10th month of her lactation period, and has made an average of 47 pounds of fat for the three months she has been on test. Mr. John Stuart's grade Holstein was second with 56.8 pounds of fat. Mr. Tom Darley takes third place for the month with his grade Shorthorn with 50.4 pounds of fat.

Mr. Thomas Bradshaw's Holsteins lead the association with a herd average of 30.6 pounds of fat. Mr. Bradshaw also has three of his cows on the honor roll for the month. Messrs. John L. and Elmer Kerr with their mixed herd take second place with an average of 28.8 pounds of fat.

This month 8 more cows were sent over the butchers block because of a tendency to produce more beef than butterfat.

Since the last of September Mr. D. A. Kerr, Mr. John Hendry and Mr. Albert Savage have bought pure-bred bulls. At present Mr. John L. Green, Mr. D. O. Neilsen, and Mr. P. L. Peterson are all contemplating the purchase of first class bred bulls for the immediate future.

Members of the association who are feeding hay alone are not getting as good results for the value of the feed fed as are those who are feeding a balanced ration. Thirty pounds of wet beet pulp per day for every one thousand pounds of live weight can be fed to good advantage. Also cows producing over 20 pounds of milk a day should receive a pound of rolled grain for every four pounds of milk produced per day. Besides this the cows should be fed all the hay they will eat up clean. Beet pulp is a succulent food and a good milk producer when fed conservatively. Grain at 40 dollars per ton is a cheaper food than hay at \$18 per ton.

The association average for the month was 20.7 pounds of fat per cow. This is .42 pounds less than last month's average. The average per cow of the ten best herds with over four cows on test was 27.41 pounds as compared with 27.56 for last month. The average of the ten poorest herds was 15.45 as compared with 14.3

Owner	Cow	Breed	Milk	Test	Butterfat
John L. Green	Nig	G. J.	1044	5.8	60.5
John Stuart	Blackie	G. H.	1536	3.7	56.8
Tom Darley	Rose	G. Sh.	1260	4.1	51.7
ReRoy Green	May	G. M. J.	840	6.0	50.4
Dan E. Stuart	Light	Jersey	1176	4.1	48.2
T. Bradshaw	Brownie	G. J. & H.	1410	3.4	47.9
John Darley	Star	Sh.	1368	3.5	47.9
Chris Larsen	Star	Hol.	1083	4.3	46.6
Roy Hall	No 12	Sh. & Hol.	1041	4.4	45.8
T. Bradshaw	Pug	Hol.	1200	3.7	44.4
T. Bradshaw	Blackie	Hol.	1245	3.4	32.3
J & E. Kerr	Roanie	Sh.	1175	3.6	42.0
J & E. Kerr	Cherry	Sh.	951	4.4	41.8
John Darley	Drip	P. B. Jersey	1026	4.0	41.0
Ray Hall	Queen	P. B. Hol.	975	4.2	41.0
J. A. Leishman	Bally	Hereford	801	5.0	40.0

WHY FARMERS SHOULD

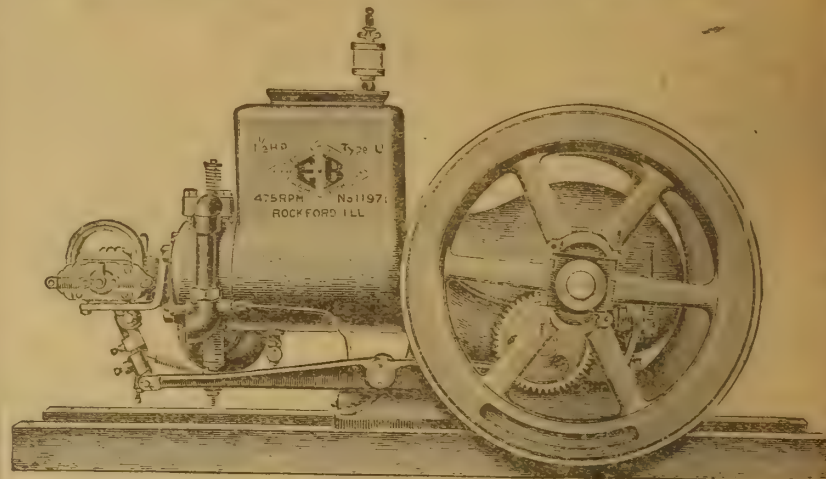
KEEP BOOKS

Keeping books pays as well on a farm as in a bank, a railroad office, or a factory. Many large farms have a regular bookkeeping department. The average size farm does not need such

an elaborate system of account books any more than it needs three or four binders, seven cream separators, nine churns, or five hay loaders. The size and detail of the system depend on the acreage of the farm and the amount of business the farm does.

The E. B. Gas Engine

MADE TO DO THE HARD WORK ON YOUR FARM



The E-B Gas Engine

THE E-B engine is cast in three sections. Should the cylinder freeze up and the jacket crack, you can replace the broken part instead of buying a new engine. The cylinder is water jacketed from end to end, providing against heating of any parts.

Vertical valves insure perfect seating, so all compression is retained and no power is lost. E-B engines develop "More Power Per Gallon"

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America, Box 279, Brattle-
boro, Vt.

pounds for last month. The average cow in the ten highest herds made an average of 12.96 pounds of fat more for the month than did those in the 10 poorer herds. The average cow in the whole association was 5.75 pounds higher than the average of the ten poorer herds and 6.7 pounds less than the average of the ten better herds.

The Honor Roll for the month is as follows:

**Make Your Christmas
Worth While**

**BUY YOUR PRESENTS
FROM THE**

C. W. & M. CO.

Tools, Cutlery, Heaters, Ranges,
Cream Separators, Toy Wagons,
Washing Machines, etc.

Make your selection now
and have them set aside for
you until Christmas.

**CONSOLIDATED WAGON
& MACHINE COMPANY**
Utah, Idaho, Wyo. and Nev.

Some person on the farm can learn how to conduct a set of books for the farm. Then only a few minutes a day or once a week, will be needed to keep a set of farm account books.

A set of books properly kept will enable a farmer to keep account of the acreage sown to crops, the cost of fertilizer, expense of planting, cultivating and harvesting the crops, and depreciation of farm machinery.

The farmer with a set of books will know how to keep time cards for every team of horses, and every man for the time they work on certain fields. He will have an accurate account of the poultry, cattle, and hogs, their cost and the value of their product to the farm—Farm and Fireside.

THE ADVANTAGES OF WINTER DAIRYING

The labor problem on the farm is an important one. There is, during the winter, comparatively little to be done aside from the regular chores. Winter dairying furnishes work during this period, making it possible to profitably employ hired help the year round, thus solving to some extent this labor problem.

Prices for whole milk are invariably higher in the late fall, winter and early spring months than they are in the summer. The farmer should produce when he can make the largest profit; this, in most cases, will be in the winter.

In the central west cows are usually turned out to pasture during April and May. If the cows freshen in the late fall they will be on the latter part of their lactation period at the time of going on pasture and consequently their milk flow will be decreasing more or less rapidly. The effect of changing the cows from winter conditions to pasture will stimulate and increase the milk flow and increase materially the yearly production.

The cows begin to dry off in the late spring and summer and do not freshen until the fall or early winter. This makes it possible to give more attention to the raising of crops and relatively less to milking and to the care and marketing of milk. In average years, during July and August, pastures are short and dry, and insufficient to properly nourish a heavy milking cow. They may, however, support a light milking or dry cow. Considerable loss in total production is sustained when a cow out two or three months from freshening is put under these conditions. Under such conditions she cannot do her best, and after decreasing in milk she cannot be brought up to her normal production. The milk flow of a cow in the last months of her lactation period will be affected to a lesser degree by heat and flies, because she is normally giving but little milk.

Calves dropped in the spring must spend the first and most important months of their lives under the adverse conditions of hot weather and flies. The milk and skim milk fed them oftentimes reach the calf slightly curdled. These conditions are overcome by having the calf dropped in the fall or early winter when its first months may be spent under more favorable conditions. The temperature is low, there are no flies, milk will keep sweet much longer and the farmer has more time to give to the proper raising of his calves. This advantage of winter dairying cannot be overestimated. The calf is the future cow from which the farmer expects to derive a fair income and if his hopes are to be realized, the calf must be given the best of care and conditions under which to develop.

The bull should never be allowed to run with the herd, yet the temptation to allow him to do so and save the trouble of separate maintenance is great. Cows freshening in the fall will come in heat during times when they are confined in the barn or barnyard at a time when the farmer will be in a position to take greater care and supervision over the breeding operations in his herd.

More favorable producing conditions, better calves, and more efficient management mean greater yields, and as the question of profit depends, to a considerable extent, on total production per cow the

importance of winter dairy is easily realized. Under present average conditions a cow yielding less than 5,000 pounds of milk or 200 pounds of butterfat cannot be profitably kept in the herd. Such a cow should yield around 1,000 pounds more of milk under the winter than under the summer system, and considering the increase in the value of the milk in the winter, we may expect from this cow about \$15 more net profit under the winter system. The difference in the cost of summer and winter feeds should be considered, but where good and cheap pasture is not available there can be little question that winter dairying, because of increased yields and higher prices, is more profitable.—W. T. Crandall.

DIFFICULT CHURNING

Failure to get butter "to come" by churning is not an uncommon experience during the winter season. The trouble most often occurs on those farms where only a few cows are milked. If the milk of one or two animals is responsible for the difficult churning, other milk when mixed with it will overcome the trouble. Usually when the trouble occurs it is due to one of two causes: an incorrect churning temperature, or because of the peculiar composition of some milk and cream.

During the cold months of the year cream should be churned at a higher temperature than during the summer months. For this reason a careful regulation of the temperature is necessary to give the proper ease in churning. If the temperature at which one churns is not high during the winter months, the cream must be churned a longer time to form butter. One may churn at so low a temperature that butter will not form with a reasonable amount of churning. It is a very common practice during the winter months to allow the cream to become so cold that it will not churn.

Sometimes when cold cream is agitated in the churn it will whip and expand until the churn is nearly full. In this condition butter will not form because the cream cannot be sufficiently agitated. When a low temperature of the cream is the cause of difficult churning the trouble may be easily corrected by raising the temperature. As the winter season approaches there is usually a larger number of stripper cows. When a cow becomes nearly dry the butterfat globules in the milk become very small and collect with great difficulty on being agitated in the churn. During the winter the feed is such that the fat globules become very much harder and this likewise interferes with ease in churning. The cream also becomes more viscous as the animals advance in their lactation period and this again makes churning more difficult.

Whenever butter granules fail to appear in about 30 to 40 minutes churning, the cream should be raised in temperature. It is well to raise the temperature only a few degrees at a time for if too warm the cream will give butter with a very soft salty texture. If on raising the temperature a few degrees the butter refuses to gather, a further raise of temperature is necessary. Whenever a raise of temperature does not give satisfactory results, add cold, pure water until the cream is diluted down to about the thickness of milk, re-separate the mixture and discard the skim milk. The cream should then churn easily but upon failure to produce butter the

Farmers, Stockmen

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A stay that is put on in one operation and in one quarter the time that any other stay can possibly be placed.

One that stays where put and lasts as long as the fence. Made in all sizes, it costs less than one half what the modern dancer does.

This is a valuable addition to any fence. It should be on yours. Good fences are a credit to a ranch and an indication of prosperity.

Used and endorsed by railroads, farmers, stockmen throughout the Inter-mountain Country.

Do your fencing in the modern way. Drive twenty one Steel posts while digging a hole for one cedar post. Burn your fence line every fall.

Ask us about Chicago Steel Posts, Twentieth Century Gates, or anything for the fence.

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Salt Lake City Utah.

cream should again be diluted and re-separated.—L. G. Rinkle.

The best kind of wire fencing to erect depends on the purpose for which the fence is used. On a farm where mixed types of live-stock are kept, a general-purpose woven-wire fabric is needed. If only cattle and horses are to be pastured, a coarser and less expensive woven fence can

be used. When fencing is needed to inclose extensive pastures where only cattle or horses are to be kept the excessive cost of a woven-wire fence would not make its use desirable, for losses to stock by injury on barbed wire would not be large enough to counterbalance the difference in the cost of maintaining the two different kinds of fences. This applies to the extensive farming areas of the West. —Department Bulletin 321.



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Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers Association.

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We guarantee every subscriber against loss thru dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent upon application.

Health first is the highest form of safety first. What can a man do on a farm without good health? Prepare against disease by having a strong healthy body.

It is not at all difficult to convert the owner of a new automobile to the good-roads theory if he is caught at the moment when he is trying to worm his way through a fresh road improvement, two miles and a half long and running from fence to fence.

ELECTRICAL WEEK.

Utah with the rest of the nation joined in the celebration of Electrical Week.

Electricity has performed wonders and it has only begun. Has brought new ways of living into the world.

Our rivers are harnessed and the power is sent, with the speed of lightning, miles away to do the bidding of man.

Many of the farmers' homes are equipped with electricity, not only for lights but for power to run their machinery. Help the wives in cooking, washing and ironing.

Electricity is helping in the wonderful progress that the world is making. Its uses will increase.

FARM LOAN ASSOCIATIONS.

The work of the Federal Farm Loan Board has reached such a stage that they recommend farmers to organize, elect their officers and loan committee and have them make a report on

the loans that are applied for.

In about two weeks the Federal Loan Banks will be named and then the farm loan associations can do business. In the mean time they can get ready so that no time will be lost.

The government is now ready to supply any one who will ask for it, all the information necessary, with all the blanks needed to form these associations.

Write to the Federal Farm Loan Board at Washington, D. C., and ask for all the instructions and literature upon this subject and get busy and organize. The Agricultural College will help if you desire.

WHY NOT BETTER MOTION PICTURES.

By far the greater part of all our citizens in this state live near to a picture show. In some of the smaller towns it is surprising the number of people who patronize these places of amusement. The pictures the young people see have a great influence on their lives, parents should help to see that only the best are displayed. Manufacturers of films make what the people want. It is up to us to see that sentiment is created for the better class of pictures. Managers of local picture houses will get the films that bring the largest crowds, if this is true who is to blame for the kind of programs given.

Over in Pennsylvania the state board of censors have eliminated films showing safecrackers at work, tramps stealing watches, people taking drugs, thrillers with heroines tied to tracks, white slavery, prize fighting and many others.

If the people in this state will not show the interest they ought to, it will be necessary for the state to enact some laws, with a state board of censorship, to protect the young people.

GLARING HEADLIGHTS.

Any man who has driven a car at night on our public highways, knows what it means to meet another car on a narrow road with glaring headlights.

It is good news to know that something is going to be done in this respect. A committee of the society of automobile engineers has put the matter up to the lamp makers. The result may be that new equipment will eliminate the glare of the headlights.

A number of states are taking steps to pass laws this coming winter. It would be all right to pass a law even though these changes are going to be made, the law would help.

The number of deaths and serious accidents that have been caused by glaring auto headlights, should cause some action to be taken. If the auto owner has any consideration for the other fellow he will equip his car with some device that will eliminate the glaring headlights. Some action should be taken right now.

WAYS FARMERS MAY CO-OPERATE.

Although we have practiced co-operation in some ways for many years, we have much to learn in this regard.

Real co-operation cannot come from without, or in other words, it can not be forced on the farmer. There must be a desire on the part of the farmers to get together before any definite results will come.

Co-operative buying and selling is a success to a limited degree in some places but this is only one way in which the farmers should co-operate.

The building and maintaining of roads leading to the main traveled highways should be done

by all who use them. Why not help one another with your butchering, hauling of milk and cream. In rural districts where the children have a long way to go to school fix up an outfit and take turns in taking and going after them. You can save time and time is money to any farmer.

Co-operate together in the building of ice houses, buying of such machinery as silo fillers and other implements that are used but a short time and cost more money than one man can afford to put into them.

These are only a few ways in which the farmers may co-operate.

BOYS AND GIRLS CLUB WORK

We all know how a small boy will gladly go on an errand and as one has said "work his head off" for a nickle. This is one of the reasons why so many boys and girls are interested in the club work—they expect and in nearly every case get a profit, a reward for their work. You know profit has a great deal to do with holding the interest of grown-ups in most any undertaking.

Another reason is that the state and government are taking an "interest" in the young people of our state and nation. They are showing them "how." They are directing them in the best way to do things. Prizes are being offered for those who excel in any line of work undertaken. In most cases the boy or girl is given the profit from the work they do. Parents are working with club leaders and encouraging their children. Business houses are helping and in many cases supply the live-stock by taking a note for same from the boy or girl.

We want to encourage all those who are taking part in this work for they are teaching our future men and women how to do things. More people should take part and encourage a greater number of our boys and girls to take part in this modern method of education and profit.

HIGH PRICE OF HAY

With alfalfa and meadow or wild hay selling at \$15.00 to \$23.00 a ton, in the smaller towns, price varying according to different sections of the state, farmers are wondering if such prices will continue another year.

If such high prices were to continue there would be big profit in raising alfalfa and much of our land now producing other crops would be put into alfalfa. Hay is one of Utah's largest crops and it should be given more careful study. How can we feed this high priced hay at a profit? It would be a very serious thing to sell all our live-stock just because the price of hay is very high this year. Hay has been so plentiful, so to speak, that we have not given it the study and attention that farmers in other states have done. We are told that dairymen in eastern states will pay \$25.00 a ton for alfalfa, often buying here in Utah and Idaho, feed it to their cows and then market their dairy products here in our state and claim they are making a profit.

What we must do is take better care of our hay. Next time you take a trip away from home look at the way many of our farmers care for their hay. One man will have a hay shed taking the best of care, while his neighbor's will be poorly stacked and possibly his stock feeding at the sides, tramping under foot and wasting more than they eat.

The high price of hay is an important problem and must be given serious study as how to best meet the situation.

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SOME DRAINAGE QUESTIONS

(Continued from page 3)

the sugar beet is the only one to cause apprehension and difficulty may be avoided by cutting away a narrow swath from directly over the drain lines for a season or so.

"How can the farmer who is not able to secure the aid of an engineer, lay his pipe and secure the proper level to carry the water off? Is there some simple method to follow?"

There are various simple methods of obtaining approximate grades for drain lines, but this part of the engineer's work is of last and least importance. There must be preliminary surveys, sub-surface studies and careful attention to the various phases of design. These are the important features and it is these that require the attention of an engineer. The mere laying out of drains may be done as an incident to the other work and at little extra expense. An engineer can save much more than the cost of his services and there are few jobs that will warrant a land owner in attempting such important work alone.

"Does the question of depth of tile have anything to do with the distance apart it should be laid in order to get good results?"

In general the effectiveness of a drain increases with its depth so the deeper two drains are the farther they may be apart. It should be remembered, however, that in the drainage of irrigated lands, spacing of drains is of little importance while location of drains is of prime importance. It is quite likely that drains will have to be located in certain places without regard to their depth. Also, in western drainage practice there cannot be much variation in depth of drains since no drain should be laid less than 6 feet in depth and the cost of drains over 8 feet in depth is often very high.

"Is there any value in laying tile if a piece of land cannot have a good outlet for the drain water?"

Emphatically, No. Such a drain will not only be of little value in itself but it may injure lands good at present and moreover its failure will serve to destroy confidence in drainage in general. It is not necessary to have a gravity outlet, however, as many successful drainage systems have pumping outlets, that is, they discharge the water into a sump from which it is pumped to the ground surface or to a channel at less depth.

IRRIGATORS QUERIES ANSWERED

O. W. Israelsen.

Is it practicable for irrigators to measure their own water?

This depends upon the conditions under which the irrigator is working. In case he is using water from a Company Canal, it frequently would not pay to measure at his main intake, since the canal measurement, if properly made, will give him sufficient information as to the total quantity of water which he uses.

However, it is very frequently desirable for irrigators to measure the quantities of water which they use on different fields in their farms. Possibly you are using more water than you need on one field, and less on the other. This would be brought out, if so, by even and approximate measurement. Water measuring devices may be had at a very low cost, and it is not difficult for a farmer to learn how to measure water with sufficient accuracy for his own purposes.

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Organize a State Farm Bureau

Last Monday at Salt Lake City a state farm bureau was organized. At the meeting were fifty men representing the different county farm bureaus and also some places where the local organizations had not been perfected but were being organized.

A temporary organization with Orson Ryan as chairman and Alva Hansen as secretary was formed. D. D. McKay who is president of the Weber county bureau outlined to those present the purpose of the meeting and the possibilities of such an organization. He was followed by W. J. Chadwick of Utah county, who spoke on the need of an organization of beet growers in Utah to improve conditions under which the growers raise and market their beets, as well as to obtain better prices for them.

Gov.-elect Simon Bamberger made a brief talk at the session complimenting the farmers on their action.

Committees were named and an adjournment taken so they could make reports. The committees were as follows:

State organization—D. D. McKay, chairman, of Weber county, R. J. Evans of the faculty of the Agricultural college of Utah, J. P. Holmgren of Box Elder county, H. H. Bell of Sevier county, and C. L. Warnick of Utah county.

Beet growing—R. H. Smith of Rexburg, Idaho; George Foster of Franklin county, Idaho; W. J. Chadwick of Utah county; O. F. Cotter, of Sevier county; N. P. Peterson, of Salt Lake county; R. T. Rhee, of Weber county; P. W. Creer, of Utah county, and C. Z. Harris, of Cache county.

At the afternoon meeting a constitution and by-laws were adopted, the feature of the constitution being that membership can only be obtained by joining a local bureau.

D. D. McKay of Weber county was elected president of the bureau, R. W. Creer of Utah county vice-president, and C. M. Alston of Salt Lake county secretary-treasurer. The executive committee, which is to be elected by the different organizations affiliating themselves with the bureau, will select other officers.

R. T. Rhee of Ogden and Representative Page of Riverton gave talks on the tax problems. Mr. Rhee speaking of the general agricultural tax problems, while Mr. Page compared the farmer with the mining interests.

The committee who made a report on the sugar beet growing brought out considerable discussion. It was decided to appoint a committee of seven, one from each beet growing section, who should meet with officials of the different sugar companies and discuss with them the question of sugar beet growing from the farmers point of view. It was not alone price of beets that concerned the farmers, but better unloading facilities, earlier period for digging and closer co-operation between the sugar company and the farmers.

After adjournment the committee consisting of W. C. Parke of Box Elder county, Ephraim Burgeson of Cache county, James Bues of Weber county,

W. I. Layton of Davis county, W. J. Chadwick of Utah county, Howard V. Alston of Salt Lake county, August F. Katter of Sevier county, George Foster of Franklin county, Idaho, and R. H. Smith of Madison county, Idaho.

The last two names were made members of the committee because of the interest Southern Idaho had in the beet growing.

An appointment was made for the next day when the above committee representing the farmers met with following officials of the sugar companies: Thomas R. Cutler and George Austin representing the Utah-Idaho Sugar Company, T. G. Taylor of the Amalgamated Sugar Company and E. P. Ellison and D. P. Layton of the Layton Sugar Company.

Official Statement.

Following the meeting the following official statement was issued by Chairman Cutler and Secretary Alston, setting forth just what requests were made by the beetgrowers and what the proceedings of the conference were:

To the farmers and beetgrowers of Utah: A conference of a committee appointed from the Utah state farm bureau with the officials of the Utah-Idaho, Amalgamated and Layton Sugar companies was held this evening in the office of the Utah-Idaho Sugar company.

Present at the conference were W. J. Chadwick, Utah county; Howard V. Alston, Salt Lake County; W. C. Parke, Boxelder county; Ephraim Burgeson, Cache county; W. I. Layton, Davis county; August F. Katter, Sevier county; James Bues, Weber county; George Foster, Franklin county, Idaho; R. H. Smith, Rexburg Idaho, members of the committee and Thomas R. Cutler, George Austin Utah-Idaho Sugar company; F. G. Taylor, Amalgamated Sugar company; E. P. Ellison, D. E. Layton, Layton Sugar company.

The committee, carrying out the injunction from the state farm bureau, met the officials in a spirit of co-operation. The spirit of the conference was one of desire to get together and work together in future for the mutual benefit of farmers and sugar manufacturers in the intermountain country.

The committee made the following specific requests:

1. That the farmers be allowed \$7 per ton, minimum price, for beets for 1917, with 12½ cents per ton additional for each ½ per cent of sugar content above 15 per cent.

2. That they be allowed better unloading facilities.

3. That the farmers be allowed the privilege of starting digging by October 1 and continue as fast as they desire.

4. That the farmers be given first consideration in buying pulp at the price of 25 cents per ton.

5. That sugar companies co-operate with farmers, through their state organization, in securing local field men and weighmasters, and such other questions as shall be for their mutual benefit.

Extended informal discussion prevailed on each request; every man present expressed his views in a perfectly frank and businesslike manner.

The sugar officials took under advisement the committee's requests

and agreed to furnish a written reply at their earliest convenience. They were unable to give definite answer until conferring with their boards of directors. Their reply will be mailed to each member of the committee and published in all the leading newspapers of the state, as is this statement of the proceedings of the conference. The growers, therefore, will get the answer first hand.

All present were agreed that in the past there had been too much ill feeling and misunderstanding between the growers and the sugar companies and that in future their aim should be, in a spirit of fairness to both sides, to co-operate and build, rather than misunderstand and tear down.

This statement was authorized by the conference to be prepared by its officers.

(Signed.)

THOMAS R. CUTLER.

Chairman of Conference.

HOWARD V. ALSTON,

Secretary of Conference.

Mr. Cutler announced, after the meeting, that it was a "get-together" conference at which the beetgrowers submitted their requests and the sugar officials received them, and the whole matter of prices for beets and the handling of the 1917 crop was thoroughly discussed. "The meeting was absolutely harmonious. We simply got together and talked over the situation, so that all will understand."

The organization of local bureaus is progressing very rapidly in a number of counties. The State Bureau will be a help to bring about better co-operation among the farmers.

In one district members of these bureaus have started a movement for the organization of a County Insurance Company. Buying and selling of livestock and farm products are other problems. Many things can be done by these organization for the help and benefit of their members.

The columns of the Utah Farmer is open to these organization and we invite them to use the paper in discussing those problems that will help to make for better farming and better home conditions in our state.

NEW COUNTY AGENTS

Carbon and Emery Counties are to have new county agents.

Wallace Sullivan has just been appointed as county agricultural agent to fill the vacancy caused by the resignation of R. H. Stewart, who is now county agent for Box Elder county. Mr. Sullivan, who is a graduate of the Fort Hays state normal school, as well as of the Colorado Agricultural college, comes to his new position very highly recommended. He has had two years' experience as a high school principal, he was instructor in agriculture in the Fort Lewis school of agriculture for two years, and during the summer of 1916 he acted as an assistant county agent.

Box Elder County have secured the services of R. H. Stewart as county agriculturist and judging from the success he has made in Carbon and Emery he will be a big help to the farmers of Box Elder.

Clara: "I suppose the brightest moment in your life was when Jack proposed?"

Cora: "Brightest? There wasn't a particle of light in the room."

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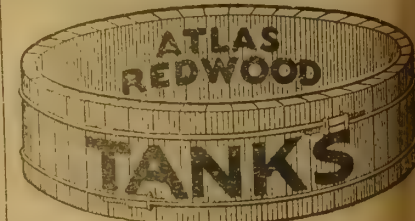
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POULTRY

FEEDING FOR EGG PRODUCTION

A hen laying 200 eggs in a year is not at all unusual. A four-pound hen laying this number will produce six times her weight in eggs. To do this she will require from seventy to eighty pounds of feed. For economical production it is necessary that the food be properly selected, that it be fed in correct proportion and in a judicious manner in order that her digestive organs may be kept in good condition, that she be fed enough so that she has plenty of surplus for egg production.

The problems of poultry feeding require good judgment and keen observation. Hens fed for egg production should have feeds high in the elements found in eggs. Those fed in the fattening pens should have the feeds which most economically produce fat. The best ration, then, is the one which supplies most economically the requirements of the bird for the purpose for which it is kept.

It should be remembered that one of the principles of poultry feeding is that the hen cannot do well if fed on a whole grain ration. Not only does a ration of grain fail to furnish the proper food nutrients, but such a ration is difficult for the bird to digest properly. The great fault with the farmer in his poultry feeding is that he attempts to feed a whole grain ration, and generally one grain at that. Such a ration results in poor egg-production and also causes digestive disorders and liver and kidney troubles. Complaints of this kind frequently come to the department of poultry husbandry and a suggested change in the ration has usually resulted in the elimination of the trouble. Efficient digestion demands a combination of whole and ground grains. A ration should consist of grains and ground feeds. Generally speaking, twice as much grain should be consumed as ground feed. This depends, of course, upon the nature of the feeds fed.

A good ration for egg production can be made with a combination of grains and ground feeds. For grains, equal parts by weight of wheat and corn, or in the winter time, twice as much corn as wheat, may be used. For ground feed, a mixture of equal parts of bran, shorts, and corn-meal may be used. Efficient egg production requires also that this ration be supplemented either with sour milk—all that the birds will drink—or in case sour milk is not available, commercial beef scrap. One-fourth of the ground feed should consist of beef scrap in case this is used.

The importance of keeping grit and oyster shell before the birds at all times cannot be over-estimated and is especially important during the winter months.—H. L. Kempster.

YOU MUST PROVIDE PROPER CONDITIONS IF YOU'D HAVE WINTER EGGS

Winter conditions must be made as near like spring and summer as possible—value of sprouted grains. Many people believe that if they furnish a reasonably comfortable house, and supply a little corn, or whatever grain happens to be available, that there is no excuse for their hens not filling the winter egg basket.

Spring and summer seasons are the natural times for hens to lay, and if they are made to lay through the

winter, conditions must be made as near like their natural laying season as possible.

Sprouted grains furnish the best solution. As a protein or egg-producing feed, oats rank much higher than corn and contain more fat than wheat. Its high proportion of hull to kernel makes it bulky and unpalatable. Sprouting overcomes this difficulty, and also furnishes the green feed so essential. Oats can be sprouted and fed at four to six inches high more economically than roots or vegetables can be produced. The time required for the growth is short, the amount of succulent material is large and increased egg production is invariably the result. One hundred pounds of oats can be increased to 350 to 400 pounds of succulent feed.

It is an easy matter to construct as home made sprouter, but unless a warm room is available, and if many birds are to be fed, it is advisable to purchase one of the several reliable sprouters now on the market.—C. S. Anderson, Colorado A. C.

EFFECTIVE METHOD FOR DESTROYING POULTRY LICE.

Entomologists of the U. S. Department of Agriculture have demonstrated that all species of lice which infest poultry may be quickly destroyed by the application of a very small quantity of sodium fluorid. Entire flocks of poultry were cleared of the parasites in this way and were found to remain free when ordinary precautions were taken against reinfestation by contact with infested fowls.

In connection with this work the entomologists made the first complete studies of the chicken mite and determined that it depends exclusively upon the fowl for its food and will not develop in any stage on filth or similar substances. In tests of a large series of insecticides it was found that a few thorough applications of crude petroleum to the interior of poultry houses will completely destroy the mites.

BEST DISINFECTANT KNOWN

"That the very best disinfectant known to science does not seem to be known to some people at all.

"I allude to boric acid, or, as some people call it, boracic acid. It is exceedingly efficient, safe, and economical. It is a white powder, and makes the best dressing for wounds that modern doctors have ever discovered. In using peroxide of hydrogen it is always necessary to remember that while it is a disinfectant it is not a healing remedy at all, as it is acid in reaction and stimulating, rather than healing, to wounds. Boric acid is mild and safe in its action, promotes rapid healing of wounds, can be used as a dressing powder or, dissolved in water, as a cleansing solution. Boric acid in solution makes an excellent gargle for sore mouths or a lotion for sore eyes, and as it is not at all expensive a pound box of it should form part of the domestic supplies of every family. Always remember that boric acid is nonpoisonous in any ordinary quantity usually used, while bichloride of mercury and carbolic acid are exceedingly poisonous. For disinfecting and deodorizing drains, the crude or unrefined carbolic acid is one of the best agents obtainable."—Farm and Fireside.

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"House" and "home" are two words in our language used synonymously very often, yet capable of the nicest discrimination in meaning. A house is something that money can buy—a shelter or place to live—no, rather a place to stay. It may be of the finest magnificence and yet fail to be a home. It may be of the poorest type and yet be a home. The subtle difference lies in the atmosphere of humanness created by the inhabitants and their genuine interest in each other.

Fortunately for women, they are endowed by nature with the capacity to make homes. Many underrate their instinct, placing above it social prestige, self indulgence, and such. As a result men restlessly haunt the clubs and hotels, getting out of patience with the idealized woman whom they do not realize, and fostering the vilest ideas of the sex.

At the end of thirty-eight years of a married life in which a man and woman had experienced everything from luxury to necessity, the husband, a man of the finest aesthetic appreciation, looked about a crudely furnished house which they had rented, saying, "I tell you, she's a great woman. Put her anywhere and she makes a home,—in a mining camp, a hotel room, or some one's old house."—Eleanor Craig, Colorado Agricultural College, Fort Collins, Colo.

MAKING LIGHT BREAD

"Like most household problems, there is no single best way to make bread. However, there are several

points in bread making, a knowledge of which is necessary to succeed, whatever method is followed." This is a statement taken from a bulletin "Making Light Bread" by Addie D. Root of the College of Agriculture, University of Missouri.

This bulletin gives important information concerning the different ingredients of light bread. The proper proportions and the handling of the various ingredients as in mixing, kneading, raising, and baking are discussed. Some valuable suggestions are given upon the most desirable kind and size of bread pans, also upon the care of bread after baking. Bread often prematurely spoils after baking from causes difficult to discover. Some of these are discussed and a remedy given. The bulletin contains the Missouri score card for judging bread and an explanation of its use. This bulletin may be obtained by writing the College of Agriculture, Columbia, Missouri.

SUBSTITUTES FOR MEAT

Now that the price of meat has gone so high, many housewives will be on the lookout for meat substitutes for their family, and some dishes of this character, especially those made of cheese and nuts, may be as nourishing as meat dishes. Below are some meat substitute dishes:

Cheese Canapes.

To two tablespoonfuls of melted butter add one teaspoonful each of salt, paprika and mustard, stir in two cups of grated cheese, half a cup of soft bread crumbs and one cup of milk. Let all cook together for five minutes and then add two well beaten eggs. Do not cook long after the eggs are added. This is a very rich and highly concentrated food, and one must serve with it plenty of good toast of whole wheat bread in order to give sufficient bulk.

Creamed Toast With Cheese Sauce.

This makes an excellent breakfast dish. Make slices of toast from whole wheat bread. Make a white sauce in the proportion of two tablespoonfuls each of butter and flour, added to one cup of milk. To each cupful of milk add one-half cupful of grated cheese. As soon as this is melted pour over the toast and serve. Two or three dates, pitted and shredded, may be added to this dish.

Escalloped Rice

Scald a cupful of milk and thicken it with two tablespoonfuls of flour. To this add half a pound of grated cheese. (The cheese may be cut into small pieces without being grated.) Season it with one-half teaspoonful of salt. Have ready three cups of rice boiled in separate grains and alternate this in a casserole dish with layers of the thickened milk. Spread crumbs over the top, grate a little cheese over the crumbs and set the dish in an oven to bake until brown.

Fried Bananas.

Remove the skins of as many bananas as may be wanted. Slice lengthwise in halves and put into hot butter. Let them brown on one side, turn and brown on the other side, and then set the frying pan back where the bananas will cook slowly. If one likes the taste of olive oil in frying, this may be used in place of the butter.

Baked Bananas.

Remove the skins from the bananas before baking. Cut in halves lengthwise. Put them in the oven and baste occasionally with a mixture of one-third of a cup of sugar, two table-



"Young man, the best tonic for you is the right kind of food. I suggest for Breakfast

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spoonfuls each of melted butter and lemon juice for every six bananas. Banana and Nut Salad.

Cut bananas in halves lengthwise. Roll in mayonnaise dressing and then in finely chopped nuts. Put a little seasoned creamed cheese on the bananas and serve on heart leaves of lettuce.

Corn Pudding.

Cut enough fresh corn from the ears to make two cups. Mix with one beaten egg and half a cup of milk, half teaspoonful of salt and a little pepper. Bake in the oven until it is set like custard, being careful that the oven is not very hot. It should require about half an hour.

THE COLD SCHOOL LUNCH

The proper feeding of school children has been a recognized problem for several years. In the cities, the establishment of hot lunches served at school has gone far toward the solution of this problem and if this could be universally applied to the rural schools, it would mean a great improvement in the scholarship and behavior of the children. However, since the majority of school children in this state must depend upon a cold lunch, it is worth while to see that the proper foods are chosen and that they are prepared so as to be both wholesome and appetizing.

The Agricultural Extension Service of the University of Missouri has issued a circular on The Cold School Lunch by Miss Bab Bell in which she gives many valuable suggestions on this problem. Several combinations of good wholesome food that make up good lunches are given and advice is also given as to what foods should be avoided. Sandwiches should, and usually do, form an important part of the child's lunch, and so recipes are given for making many different kinds of good, wholesome sandwiches. The lunch box, or container, and the method of correctly packing

lunches in them are also discussed. This circular may be obtained by writing to the Missouri College of Agriculture, Columbia, Missouri.

OYSTER TODDLE.

Oyster toddle is a kind of chowder. Chop a quarter of a pound of fat salt pork and cook slowly until well dried out. Add two cupfuls of sliced raw potatoes, cover and cook in the fat until very tender. Pour in two cupfuls of hot milk and cook five minutes. Thicken with one teaspoonful of flour worked into one teaspoonful of butter. Add three cupfuls washed oysters, salt and pepper to taste; remove from fire as soon as oysters ruffle. Serve hot with crackers.

Surprise Oysters.

Cook four medium size potatoes until done, mash and season with salt, pepper, butter and a little parsley. Scald a dozen oysters in their liquor, then drain. Take up enough potato when rolled to be about the size of an egg, make cavity in one end, insert oyster, fill in cavity, dip in beaten egg, roll in cracker crumbs, and fry in deep fat until a golden brown. Serve while hot. This is nourishing and inexpensive.

Oyster Paddies.

To one pint of mashed potatoes, add one beaten egg and a little minced onion, form into cakes, split cakes with sharp knife, lay two or three oysters on lower part, and replace top. Bake in moderately hot oven until paddies are brown, garnish with parsley.

CAULIFLOWER a l'Huile.

Wash cauliflower and boil carefully until tender in salted water; then drain and cool it. Serve covered with the following sauce: beat the yolk of one egg, add one tablespoonful of olive-oil, heat very slowly, then add one teaspoonful of vinegar, one eighth of a teaspoonful of salt, one teaspoonful of made mustard, two tablespoonfuls of cream and one-fourth of a teaspoonful of paprika. Allow to become very hot, but do not let it boil. Cool before using.

CHOCOLATE MARSHMALLOW FUDGE: Put two cupfuls of sugar, two squares of unsweetened chocolate and one cupful of top milk (the first pouring from a quart bottle) in a saucepan. Heat gradually to the boiling point, and let boil until mixture will form a soft ball when tried in cold water. Remove from range, add three tablespoonfuls of butter, and as soon as butter has melted beat until creamy. Add one teaspoonful of vanilla and fold in ten marshmallows, cut in sixths. Turn into a buttered pan, cool, and cut in cubes.—Woman's Home Companion.

A DEFINITION OF GOOD BREAD

Bread should have a nutty and sweet odor. There should be no sour taste or smell.

Bread should be of fine, even texture with no large holes in it. When pressed with the finger, it should dent easily, but the dent should spring back to the level surface. If the dent stays in the bread, it is not sufficiently baked. If the bread is so hard you cannot press it easily, too much flour has been used in mixing.

The crust should be uniform in thickness on all sides of the loaf. It should be rather thin and should not be hard.

The bread should be baked in such pans that it will rise easily and be of uniform height in all parts.

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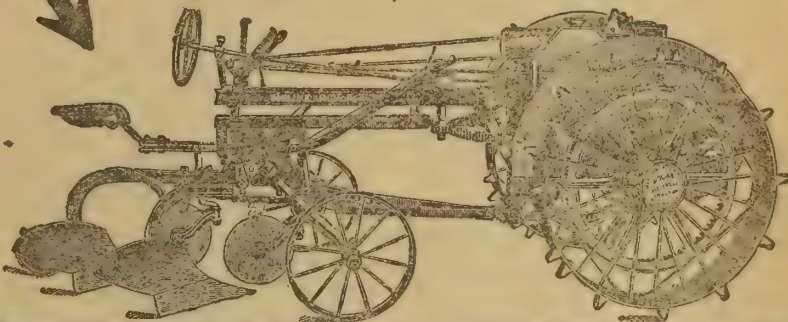
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Making a Profit From Pure-Bred Livestock

Wm. Olsen.

[This is the first of a series of write-ups of farms which we plan to give our readers. We believe that people like to read about the other fellow and learn how he is making a success. All branches of farming will be covered. They will not appear every week but just as often as we are able to secure the write-ups. Editor.]

Some people select farming because they were born and raised on a farm others go into it because they like it. When I visited the farm of the Richards Live-stock Company the other day at Virginia, Idaho, and was shown about the place by Jesse S. Richards, the manager, he soon converted me that he was in the farming game because he liked it. That he was raising pure-bred hogs and horses because he like them. There seemed to be no detail too trifling that he would not cheerfully do for the comfort and care of his live-stock, and after all there is much in this love of live-stock, for I am converted that these dumb animals respond to the care and feed that is given them. Previous to taking up their farm

deem necessary from the best blood of the most fashionable eastern families. At the shows where they have exhibited they have took many prizes. At the Utah State Fair 1915, they won Grand Champion Boar, Grand Champion Sow and many other prizes. Again this year they won at Salt Lake City the Grand Champion Boar, Grand Champion Sow, with many other first prizes.

Records are an important thing on this farm. They are very careful as to the breeding of their stock in order that they can mate their sows and boars to obtain the best possible results. A daily record is kept of all the important happenings on the farm, and when a sow is mated record is kept so that she can be carefully



Eureka Defenderess, a daughter of Richards Defender, was made Grand Champion Sow at the 1916 Utah State Fair, weighing 281 pounds at the age of 6½ months.

in the Marsh Valley they were in pure-bred sheep business, buying and selling Rambouillet and Cotswold rams. The company was formerly owned and established by Charles C. Richards, an attorney of Ogden, and his three sons, Charles C. Richards, Jr., Jesse S. Richards and Harold P. Richards. Sometime ago Charles C. Richards and Jesse S. Richards purchased the interest of the other two members, and now own and operate the business with Jesse S. Richards, as manager.

About eight years ago the Richards were some of the very first to locate at Virginia. They own 360 acres, part of it laying along the railroad.

It was not until 1910 that they decided to go into the pure-bred hog business. They became converted to the Duroc Jersey type. Mr. Richards gave as his reasons why the Durocs were better for this country, because they are great rustlers, more prolific, and can be produced at a marketable age in a shorter length of time and on less feed than other breeds of hogs.

They started out by securing some of the best pure-breds they could buy. To keep up the high standard that they had set, they now import as they

looked after at farrowing time. The boars are not allowed to run with the sows, as they would ruin themselves, and also a record could not be kept of the date of breeding.

These people believe in the A shaped portable house, as they are inexpensive and can be moved from place to place on the farm. These houses are built 8 feet square on the bottom with a sloping roof 8 ft. high, making the pens about 6 ft. high inside. Plank floors are laid in the pens in order to keep the pigs dry during stormy weather. Twenty seven of these pens are now on the farm, and are used out in the different lots and pastures. About eight of the brood sows are kept together in a pasture or lot during the winter, and have one of these houses to sleep in. They are taken to the boar, who has one of these lots himself each day during the mating season. These people believe in lots of exercise for their breeding stock, as they claim they can get better results where the boars and sows get lots of exercise, and are not too fat. The sows are fed all winter on all the good bright alfalfa hay they can eat with a small feed each day of shorts or rolled soaked barley. They believe in

RELIABLE FARM BARGAINS.

80 acres one mile from the center of Tremonton, on the main highway. This property has been farmed for 25 or 30 years, one of the oldest farms in the Bear River valley. Lands immediately adjoining this have been sold for \$150 to \$200 per acre. This man lives in California and has authorized us to sell at \$125 per acre.
List 3.

We have 40, 80 and 160-acre tracts for sale in southern Idaho with first-class water right. Some improved and some unimproved that we can sell for small payment down and ten years on the balance at 6 per cent interest.

640 acres first-class dry farm land, 1¼ miles from the railroad station. 180 acres planted to summer fallowed wheat. \$15 per acre, on easy terms.
List 4.

40 acres one-half mile from Elwood station. Raised first-class sugar beets this year. On the main county road. \$115 per acre. Terms.
List 2.

460 acres in the center of the Bear River valley, ¼ of a mile from the railroad station and beet dump. All fenced and surrounded by first-class farm land. This property is all covered with heavy sage brush and all subject to irrigation at a very low cost. Can be had for \$35 per acre. Ten years to pay at 6 per cent interest.
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rolling all grain and soaking it before feeding so as to get all the possible nutrition out of it.

By keeping a record of when the sow was mated Mr. Richard said, she can be locked up alone in a pen a few days before she is due to farrow. This will get her used to her pen, and the feed can be increased if necessary in order to insure a good milk supply. The farrowing pen which they use is not expensive; has a board floor in it, and a guard rail around the inside, and six inches from the floor so that when the sow lies down the pigs can escape under the guard and not be crushed. The day after the pigs are farrowed they are taken from the sows and are ear marked, so that later on if they become mixed with the other pigs their pedigree can be kept track of. Each pig in a litter is

are feed shorts each day. In this way the pigs become accustomed to eating, and when weaning time comes their mothers are taken away and they go on just as well as before, because their digestive organs are used to the shorts, and they are not stunted or set back by the taking away of the mother's milk.

The feed for the hogs is mixed in a large barrel which is worked and run on two large wheels with a handle and easily pulled around.

Mr. Richard took great pride in showing me a brood sow six years old that has brought him \$1200.00. He showed me the record of each farrowing and the price for which he sold each pig. Of course she was a good sow and produced a large number at each farrowing.

Plenty of fresh water is an important



Richards Defender, the Grand Champion Boar, was imported from Kentucky at a big price, and is a son of the great Defender who twice sold for \$5,000.00.

given the same mark, and this mark is carefully written down so that later on when the pigs are weaned and the litters are mixed by catching a pig, seeing its ear mark and referring to the daily record they can tell the sire and dam and date of birth of pig. While earmarking the litters they take a pair of small pliers and break off the small tusks of the little pigs so that they will not fight and scratch each others faces. After the sows have farrowed four or five days, and the pigs get to know their mother the sow and her litter are taken out into a pasture and given an "A" shaped pen. If it becomes necessary to do so two sows and their litters are placed in one pasture and pen, but the litters are not mixed before they are two weeks old, and the pigs should be the same size and age. Never are more than two sows and their litters placed together, and in this way they do not have many units. They believe in plenty of alfalfa pastures with a little grain all summer. In one corner of each of these pastures the corner is fenced off, the fence being a foot from the round so that the little pigs can crawl under, but high enough to keep the old sows out. A shallow trough is placed in this pen and when the pigs are about three weeks old they

thing on this farm. There is a large tank always full, supplied from a well, the pump being driven by a gasoline motor. This same motor runs the grinder and other machinery. For wintertime they have a little cast iron stove that is placed down in the center of the water tank and is so constructed that it is water tight. About one third of a shuttle of coal will last until morning and the water is warm enough so the stock will drink all they need. The farm is equipped with a blacksmith shop, with blacksmith and carpenter's tools so that most of the repairing of the machinery can be done on the farm. An inexpensive shed covers all the farm machinery and implements.

A choice Percheron Stallion, imported from France, is on the farm. They have a number of fine brood mares, with which they do the farm work, believing it can be done cheaper with these mares than any other way. The colts produced help pay the expenses.

They are extensively in the chicken business, running most of the time about 600 white leghorn hens. They have a coop 16 ft. wide by 150 ft. long, and it is fixed with all of the conveniences necessary for properly taking care of the chickens during the severest of weather. In the spring of the year, when eggs drop below 25c per dozen, they store them in waterglass, having several large concrete vats in the basement of their house, in which they store the eggs. They have been storing these eggs each year for the past six years and find ready market for them each winter in Ogden and Salt Lake. They keep a careful record of all feed and cost of producing eggs and they claim to make more than \$1.00 per hen net.



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Try serving ROYAL BREAD and you'll appreciate the economy and convenience of buying this perfect bread from your grocer.

Royal Baking Co., Salt Lake City, Utah

Mr. Richards is thoroughly converted to advertising. The very fact that he carries an adv. in the Utah Farmer each issue of the year shows what he thinks of this paper. He advertises in many ways and this is how he sell his live-stock. He backs up every sale with a guarantee of satisfaction and this every farmer should do. A huge sign advertising Duroc hogs is on the edge of his farm and can be seen for a long distance, every one who passes on the train can read it.

I do not believe that any man can thoroughly succeed unless he has a good wife who is in sympathy with his work. Mr. Richards has in every sense of the word a help mate. As we left the farm in the late afternoon Mrs. Richards went out to oversee the feeding of the chickens, not because it was necessary to do this work, but

she seems to like to do it. If I were to give the reason for the success of these people it would be that they are converted to the work they are doing, they like hogs, chickens and horses, they study carefully the needs on the farm and enjoy working out the problem in order to both make a pleasure and a profit from their work.

HE DISSIPATED.

A small, hen-pecked, worried looking man was about to take an examination for life insurance. "You don't dissipate, do you?" asked the physician, as he made ready for tests. "Not a fast liver, or anything of that sort?" The little man hesitated a moment, looked a bit frightened, then replied in a small piping voice: "I sometimes chew a little gum."

HOUSE PLANTS

(Continued from page 3)

Propagation Bed.

The average home has no conservatory with a propagation bed, therefore the writer will give a few suggestions as to how to prepare a box for this purpose.

For cuttings of hardy plants such as geraniums, fuchsia, chrysanthemums and others, a box can be used about four inches deep filled with sand to within one-half inch of the top. This box can be made so as to fit the window used for this purpose. It would be well to select a window where the plants can have sun at least part of the day. For cuttings of more tender plants such as begonia, coleus, acyranthus, cyperus, etc., the box should be made six inches high on one side and ten inches on the other, filled with four inches of sand, in which the cuttings are to be planted, then the top covered with a sheet of glass. The box should then be placed in a position so that the slope faces the light. A more even temperature and damp air may be retained in a box of this kind. It is, however, necessary for all cuttings to be shaded with a piece of paper for a few days or the first week after planting.

The propagation box should be supplied with holes in the bottom, and these covered on the inside with rocks or other material for draining. The sand should be kept fairly wet and never be allowed to become real dry.

Potting of Rooted Cuttings.

When the cuttings are well rooted they should be removed from the propagation box and planted into small pots (two and one-half to three inches).

The soil mixture for potting rooted cuttings should be one part screened sand and two parts screened good soil. If leaf mold or mountain soil can be had this will be the best.

When potting, put a small rock over the hole in the bottom of the pot, then put in a little soil and place the cutting in the center of the pot, taking care that the roots do not lay doubled up or in a position so that the tips of the roots will point upward. Then fill the pot with soil and press firmly around the plant. The soil will sink enough to allow room for watering.

When watering potted plants supply each plant with as much water as will penetrate all the soil in the pot. As soon as this point is reached the water will begin to come out through the drain in the bottom of the pot; then no more water should be given until the soil is dry again. This method applies to all house plants mentioned in this article. Too much watering is very often the cause of poor results in keeping house plants. It is easy to tell when the soil is dry either by looking at or feeling the soil, or by knocking on the flower pot with the knuckle of a finger. If the soil is dry the sound will be ringing, which is not the case if the soil is wet. Many make the mistake of watering "little but often" and thereby cause the upper part of the soil in the pot to remain wet and thus pre-

vent the air from penetrating and cause the upper part of the soil to become sour, while no water gets to the bottom of the pot where the heaviest roots are. The plant consequently cannot absorb the water.

When the small pots are filled with roots the plants should be transplanted into a large pot. The same soil mixture as given before may be used with the addition of one part of well rotted manure.

House and Bedding Plants.

Many plants which we can have in bloom throughout the winter will make good plants in the outside flower beds during the summer, such as marguerite, fuchsia, geranium, pelargonium, salvia and others. Those plants should be dug up in the fall before frost arrives and planted into pots. When the plants are potted they should be cut back and the top used for propagation of new plants. The old plants should be planted in a soil mixture of the following: Two parts screened loam, one part sand and one part well rotted manure. Such plants will be quite decorative about Christmas time and throughout the rest of the winter.

If more bedding plants are wanted over winter than is desired in the living rooms, these can be planted in boxes or pots and placed in a light cellar close to a window which in mild weather can be opened. If the temperature in this place can be kept at about 40 to 50 degrees, this will be most suitable.

The watering of these plants during the winter should be very sparing and towards spring when the days get lighter, watering can be increased, and in the spring after the danger of frost is over, these plants can be used for planting out in beds in the garden or in porch or window boxes.

Window and Porch Boxes.

In late years window and porch boxes have come into more use and especially in cities where ground space is rather scarce. Boxes of this kind have made wonderful effects. Also plants such as dracena indevisa and others in tubs make a great improvement on a building when placed on the steps or by the entrances and the expense of filling these boxes and tubs is small. Porch boxes may be placed directly on the floor or on the railing. Window boxes when placed on brackets under the windows should be about nine inches deep, and seven inches wide at the bottom and about eight and a half inches at the top, all inside measurements, and it is best to make them of one and one-half inch lumber with a partition about every three feet to prevent the boxes from warping.

The plants used most in these boxes are geraniums in colors to suit the taste. For hanging plants we recommend vinca, mesembrianthemum, ivygeraniums or nasturtiums. Various other plants can be used to produce the desired color effects, such as fuchsia acyranthus, begonia, pelargoniums, salvia splendens and petunia. The little blue-flowered lobelia gives a good effect.

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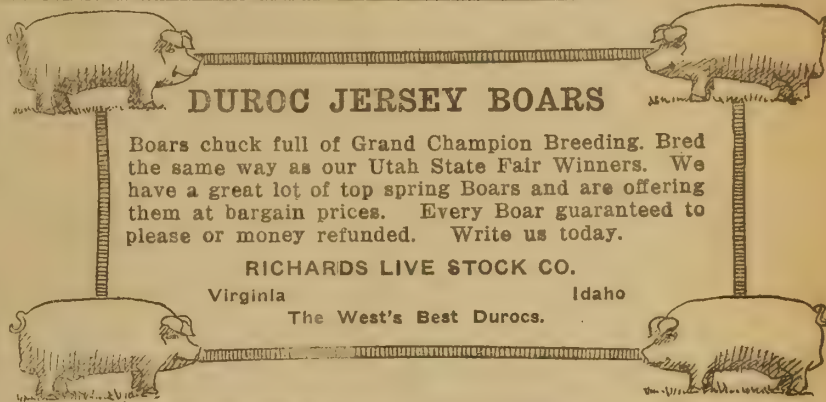
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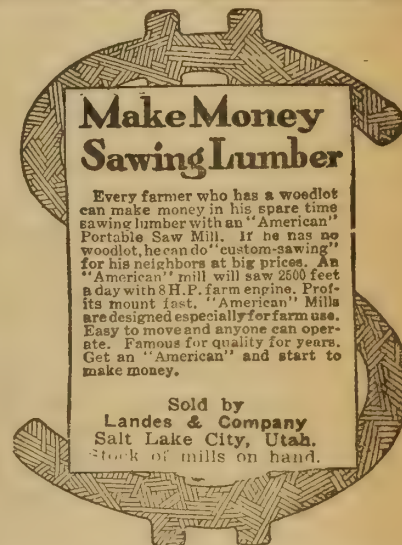
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Profitable Crop Rotation

The Department of Agriculture states that the most profitable crop rotation does not consist merely in changing the crops around from year to year, regardless of the relation of the crops to each other. The central aim in all crop-rotation systems should be to leave each field in a better physical condition, and reasonably free from pests at the end of each rotation cycle.

No hard and fast rotation system can be laid down for any community, but the most profitable system must be worked out for each farm and, indeed, for each field. There are certain general principles, however, that should be borne in mind in this connection in order to accomplish the most satisfactory results. For soil improvement there should be at least one leguminous crop in each rotation cycle. To this class of plants belong the clovers, alfalfa, peas, beans, etc. There should be also a sufficient quantity of livestock, especially milch cows, on each farm to utilize the roughage and to supply the desired quantity of stable manure, which, in addition to green crops plowed under, will furnish the necessary amount of humus to the soil. The conditions resulting from this treatment, if the soil is properly handled, will make the succeeding crops more vigorous and capable of offsetting, in some measure at least, the effects of any pests that may appear. Again, the successive crops in any rotation should be so selected and arranged that no two upon which the same pest may thrive will be grown in succession. The principles of disease control by means of crop rotation are based upon the fact that certain pests can thrive only on certain kinds of plants. Therefore, when the crops are changed and the food supply thereby cut off, the pests must perish or be greatly reduced in number.

MUCH WOOD FLOUR USED

More than twenty thousand tons of wood flour, valued at \$300,000, are used annually in the United States in two widely different industries, the manufacture of dynamite and the manufacture of inlaid linoleum.

Wood flour is also used in making composition flooring, oatmeal paper, and in several other industries. It forms one of the means by which the huge waste product of our lumber mills is beginning to find some better means of disposal than the burner. Since a total of 36,000,000 cords of such waste is produced each year at sawmills in the United States, of which about one-half goes into the furnaces as fuel while the rest is burned as refuse to get rid of it, there is no lack of raw material for industries which can develop ways of turning this waste to account.

All wood flour-using industries require a white or very light cream-colored flour having good absorptive powers. The wood species that may be used are confined to the light, non-resinous conifers, and the white broad-leaved woods like poplar. Spruce, white pine and poplar are the species most used. Mill waste, free from bark, furnishes much of the raw material for making wood flour.

For use in dynamite, the trade demands are said to require a white wood flour, since the freshness of dynamite stock is indicated by a light color. Dynamite flour must also be very absorptive, so there will

be no leakage of nitroglycerine from the finished product. Wheat flour mill refuse and infusorial earth have also been used in dynamite making, but wood flour has practically replaced them in this country.

In the manufacture of linoleum, either wood or cork flour is used. The flour is mixed with a cementing material, spread out on burlap and rolled or pressed to a uniform thickness. The cement is the expensive constituent. Cork linoleum is the cheaper because less cement is necessary. The patterns are printed on, leaving a dark base. For inlaid or straight-line linoleum, wood flour is used exclusively. Cork linoleum is always dark, and slightly more elastic than that produced from wood flour. The wearing qualities are about the same.

Two methods of producing wood flour are practiced; one using millstones, the other steel burr rollers to pulverize the wood. The latter requires only one-fourth as much power to operate as the former and was developed on the Pacific Coast to handle sawdust as a raw material.

The mills of Norway which produce much of the European wood flour are of the stone type.

GRANPAP ON MODERN METHODS

By some durn fool scheme of tillin' John has dreaned tne pesky slough In the medder. Now he's spillin' Fer some other trick tu do; Drat his picter! Him'n Lizzie Al'ays has ther elbows bent. All last winter John was busy Makin' fence posts of se-ment.

Slack times, Lizzie she's a-helpin' John a right smart now and then, Shec'ly if the kids ain't yelpin', But when they need tendin', then John's gas en'gin does the washin', And dinged if the thing don't churn. Way John farms is sure a caution; W'l them folks has gas tu burn!

John has got a patent dingus Tu divide the milk and cream, And he's built a konkret thingus Filled with some durn fodder scheme Fer tu feed the drated cattle

Tu increase their milk supply. He says half the farmin' battle Is the what, the when and why.

Has a rig for strainin' honey; Railroad en-jines hitched tu plows, Just got through a-spendin' money Fer machines tu suck the cows. Bought an auto, Liz is steerin'— Speck she'll run it in the ditch, But they're both farm engineerin', And I guess they're gettin' rich!

—Howard C. Kegley.

STOP THOSE GULLIES!

Small gullies that have started in the field should be stopped by filling them with straw or similar material. If the gully is large it is advisable to plow in soil on top of this material and sow to oats or later to sorghum so that the crop will come up thick and form a strong root mass to bind the soil together. The proper use of debris for filling and rank growing plants for holding the soil will stop most washes entirely. Eternal vigilance, however, is necessary for complete success.

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**Beet
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The Borden Condensed Milk Co.—Wagons pass through the area.
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RICHLAND ACRES HAS

Tile drained, silt loam soil one to five feet deep.
Every element requisite for plant food, according to actual analyses.
Land adapted for sugar beets, alfalfa and garden truck in particular.
Reclaimed swamp lands of unexcelled fertility for celery culture.
Unsurpassed primary water rights and excellent flowing wells of purest water.

RICHLAND ACRES IS BEING SOLD ON EASY TERMS AT \$100.00 TO \$200.00 PER ACRE—ONE FOURTH CASH—THE BALANCE IN TEN ANNUAL INSTALLMENTS, BEARING 6% ON DEFERRED PAYMENTS.

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 20 LEHI AND SALT LAKE CITY, UTAH DECEMBER 16, 1916



Cultivate More Land Next Year

From all reports we are able to obtain and judging from past experiences, the year 1917 looks very hopeful to the man who tills the soil—to the man who will produce any kind of food stuff. The prospects are that prices will be very favorable. We may not get extremely high prices but we are assured by every indication that there will be a good market for any kind of farm products.

For this reason we urge every one to bring under cultivation every foot of ground possible. Do not allow a foot of vacant soil to grow weeds—if the owner will not use it, you rent it and produce something on it. Watch all the waste acres on your own land and make even the ditch banks

and partition fence ground produce something.

Help to bring under cultivation some of the many acres of the uncultivated land near your town or farm. Thousands of acres only await the touch of the farmers hand and it will become productive. Not without work, but it will respond to your efforts and thus the producing acres of our state will increase.

Study conditions and plan now your work for 1917. Live-stock will be a greater factor in our state's development next year than ever before.

We believe that 1917 will be the greatest agricultural year our state has ever known.

Digging For Dollars Is What Everybody Is Doing

One of the most fertile fields where you can dig and be sure to learn the way to get the dollars is in the Utah Farmer. A graduate of an agricultural college from one of our Western states, who is now a resident of Utah, said the other day, that he received several farm papers but the Utah Farmer was the best for him.

The Acid Test

Put the Utah Farmer to the acid test---is it **helpful, dependable, practical?** It is all of these and more, it is **clean and reliable.** Increase your knowledge of farming by reading the Utah Farmer each week. Be a farmer among farmers---get ahead---make money. You can do this if you will read the Utah Farmer and put into practice the helpful suggestions and money-making ideas as they come to you each week.

Eight hundred and fifty-six pages last year---just think of the amount of reading you can get for one dollar. It would cost several times that amount if the same were bound in a book. Right now is the time to join the family of readers of

THE UTAH FARMER

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VOLUME XIII.

LEHI, UTAH, SATURDAY, DECEMBER 16, 1916

No. 20

Something About Potatoes Their Food Value

Mary Johnson.

Some people seem to have very peculiar ideas about the food value of potatoes. You hear them discuss the question as to whether they should eat potatoes or not. A little discussion on the subjects should interest most every one because of the great number of potatoes we eat.

Some will tell you that the potato is fattening let us allay that ghostly superstition about the potato as being fattening. Foods which contain almost 80 per cent of water, as does the edible part of the white potato, give too small returns in the way of solids to be really good fattening material. They are no rival for cornmeal in this particular.

Any one who will behave reasonably as to exercise and fresh air cannot fatten on any of the fuel foods, but let it be said that what is solid in white potato is almost pure fuel—that is, something to be used up on the day eaten for energy and body heat. It is more than three times as difficult to overeat of potato, unless richly dressed with butter and cream, as it is to overeat of bread.

To speak in more scientific and specific terms, the caloric value of white potato per pound is 378, while bread, with which it is frequently grouped as though they were the same in this respect—that is as solid food yielders—averages 1,200 calories per pound, varying according as it contains more or less of water. Dry bread and day old bread have higher caloric value than fresh.

This difference in the two foods as fuels is comparable to what soft wood and hard wood give in the way of heat when burned in a stove. Bread is hardly anything else than fuel, while potato is good bulky stuff which the alimentary canal can grip. It rectifies acid conditions by its contribution to the blood of valuable minerals.

The reaction of bread is acid because of its chemical nature. More than this and far worse, it is apt to yield acid because of wrong chemical conditions. These conditions prevail or bread chemically misbehaves when it is eaten too fresh or when chewed insufficiently. Since it may be partially digested in the mouth, but not at all in the stomach, just as long as it has to stay in this receptacle at 100 temperature it may cause discomfort or ferment, developing a harsh acid to be absorbed by the body and one that is capable of doing many sorts of harm to health. By constantly repeating this process a physical breakdown at length results, strive heroically as he body always does to heal itself.

It would not take long to learn this simple lesson. Why not do it?

Here are two foods which appear daily or three times daily in our diet, why not understand what they do? People are all the time asking me where and how to begin to study foods, yet such lessons as this pass right over their heads. I commonly tell them to begin anywhere and at any time and strangely enough they never seem to think they have begun when they take from me some of the vital principles I have sifted down from many years of study. There are a



This year will see more activity in the boys' and girls' club work than ever before. Give the boy a pig to raise, let him care for it—feed it—and have the money when he sells it. Let your boy join the pig club.

few things I am sure about and would like to have them prove for themselves why.

Ways of Cooking Potatoes.

Potatoes grow old when cooked in the same style day after day. They can be varied, however, and cooked in appetizing ways that are different from the usual. The following recipes for potato dishes may relieve the monotony of fried and mashed potatoes somewhat:

Potato Muffins.

For party service, when a rather nourishing meal is to be served at no great expense, the potato muffin is serviceable with cold meat or hot either. In adding egg or cheese to the potato we make the dish a more completely balanced one. When made with egg these muffins may be used without meat and served with a white sauce, especially when some other vegetable such as eggplant is used,

(Continued on page 7)

Handling and Marketing Potatoes

Greater Care Necessary in Digging and Handling.

In order that the present large losses of potatoes may be eliminated and that conditions in the potato growing industry may be bettered in general, growers should exercise more care in digging and handling the tubers, should work toward the establishment and strict observance of grades, and should carefully study marketing needs and conditions.

Early and Late Potatoes.

There are two definite crops of

tive potatoes is sufficient to discount an entire shipment, the selling value being largely determined by the poorest tubers in the lot rather than the best. Even the less perishable northern crop may be injured by hauling from the field loose in wagons. This practice usually involves subsequent handling, often with shovels and scoops, which further bruises the potatoes. A good practice, is to pick the potatoes into open-slatted crates and haul the filled receptacles to storage or grading houses or to cars.

Grading.

Many sizing machines are used to grade potatoes and, since they give more accurate results than hand grading, their use should be extended. In addition to sorting, these machines are of service in removing dirt. This is an important fact since there are many complaints by buyers of the presence of dirt among potatoes and greater allowances are being demanded in price adjustments on this account. The mechanical sizer simply sorts as to size and the stock must be further graded by hand to eliminate potatoes affected by sunburn, dry rot, scabs, frost, or other defects.

All grading should be done preferably on the farm. If the grower ships ungraded stock to market, it must be graded there where labor is more costly. In addition to paying, in lower prices received, for this labor, he also pays freight on the rejected potatoes and loses the culls, which he might have utilized on the farm. Grading is facilitated where the grower has sufficient storage space for a large part of his crop. In this way potatoes which do not show the effects of frost or other damage when first dug may be detected later and sorted out before the crop is marketed. If the potatoes are shipped without sorting, the damage usually brings about rotting of the injured potatoes before the market is reached and reduces prices on the whole shipment.

It is suggested that specifications for the No. 1 grade should be drawn to make it as good and attractive in appearance as is reasonable and practicable. These specifications should practically eliminate potatoes damaged by frost, sunburn, blight, common scab, dry rot, decay, second growth, cuts, bruises, dirt, and also undersized of coarse stock. The minimum and maximum sizes for both No. 1 and No. 2 grades are still a subject for careful investigation, discussion, and demonstration. However, a minimum of about 2 inches is main-

(Continued on page 15)

potatoes in this country each year: the southern early, or "new" potatoes, which are perishable, and the northern late potatoes, which are only semi-perishable. The treatment of these crops must differ considerably.

Northern, or late potatoes, are dug in August and September. Forks are used to a certain extent for digging this crop, but most of the average is by plows and digging machines. For the successful use of the latter, soil conditions must be good. Under favorable conditions the use of such machines has been found profitable. There is much loss from bruising potatoes in all types of digging. Deep plowing with plows and machines should eliminate most of such losses.

Picking is mostly by hand, but some combination digging and picking machines are in use. If the potatoes are to be graded as picked, growers should carefully instruct pickers in the work, since the inclusion of a few diseased, cut, or defec-

Dairying

COW-TESTING ASSOCIATIONS IN THE WESTERN STATES

Dairymen in the Western states are to be congratulated for their progressiveness, as shown in the manner they have taken up the cow-testing association idea. Four years ago there were only two active associations in this territory. On December 1, 1916, there were forty-two strong associations with a membership of about 1,100 dairymen and with approximately 21,500 cows on test.

The Dairy Division of the Bureau of Animal Industry, U. S. Department of Agriculture, reports that the number of associations in the United States on July 1, 1916, was 346; and that the number of associations during the year ending July 1, 1916, increased 164 per cent over the year before. The reports show that the increase in the western states was 28.5 per cent.

While the greatest number of associations are in Oregon and Washington, the other western states are fast becoming interested. Of the seven states in the United States that organized their first associations during the past year, there were western states, namely, Idaho, Montana and Arizona. Since July 1st, Wyoming has organized one association. It is interesting to note that the State of

Washington has increased the number of associations from one to 16 during the past year.

In looking over the records of these associations as published in the Agricultural papers we find that the production records made by cows in the western associations are exceptionally worthy of merit. Frequently, some cows in one of the western associations establishes herself as the highest producer for the month in any of the organizations of the kind in the United States. When we consider the fact that a large number of the dairymen in the West are new in the business and that they do not have a very great variety of feeds for their cows, we must conclude that this section of the country has unusually favorable conditions for dairying. This, in part, is true, but these very good results are due to a certain extent to the manner in which the western farmer is taking up the new business and to the class of testers who are being selected to instruct the dairymen in the methods to be employed in getting dairy cow efficiency.

Out of 42 testers now employed in the western associations, more than 30 per cent are four-year agricultural college graduates, and all of them have had special instruction in this kind of work.

A new idea is fast taking root in forming these associations—that of organizing for a longer period than one year. The Buhl Pioneer Cow-testing Association of Buhl, Idaho, which made an average production of 204 pounds butterfat per cow during the first year, has taken the lead in this respect and has just reorganized for a period of three years with 25 of the 28 members remaining in the association for the three-year period. Other associations are considering this plan, and it is expected that when the time comes for reorganization they will adopt the plan in force at Buhl.

All of these associations are strong ones and little trouble is expected in keeping them active. The reasons are that the members are wide-awake dairymen, the testers are competent men, and they are receiving the benefits to be derived from close co-operation with the extension forces of the agricultural colleges and of the western office of the Federal Dairy Division.

Following is a list of the number of active associations in each of the western states on December 1, 1916:

Oregon	17
Washington	16
Idaho	2
Arizona	2
Nevada	1
Montana	1
Wyoming	1
Colorado	1
Utah	1

RAISING THE HEIFER CALF.

All dairy writers agree that the best and cheapest way to build up and improve the milking herd, is to use a pure bred sire of the best breeding obtainable, and to raise the heifer calves. Many prospective good cows, however, are spoiled in the raising. They should not be forced, nor should they be stunted for lack of feed, and scours must be rigidly guarded against and promptly handled when it appears. Whole milk is far too valuable a product on which to raise the calf. Skim-milk with proper supplements will not make as growthy and fat a calf, but at two years the early



Pasture Comfort for Your Cows---Bigger Profits for You

Cows are a lot like humans in the way they respond to kind treatment and comfortable surroundings.

The difference in a year's returns from contented and from discontented cows will pay for Loudon Sanitary Steel Stalls and Stanchions.

Try them out in your barn and watch the milk yield jump. They cost but little more than wood; they last ten times as long. They protect the cows from injury and keep them clean.

You won't have to build in order to use them; you can install them in the old barn.

The Loudon line includes:

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While money is plentiful is a good time to save.

Crops may not always be so good, metals so high and business so active. Put some money away in a savings account NOW.

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BAND INSTRUMENTS

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DAYNES-BEEBE MUSIC CO.
SALT LAKE CITY

advantage of the milk fed calf will have disappeared.

The following outline gives very briefly the best practice in raising the calf.

Separate the calf from its mother either when only a few hours old, or at an age of three or four days.

Let it get quite hungry before giving it its first meal of its mother's milk from a pail.

Feed often, three or four times a day at first, but never feed all the calf will drink.

Always have the pail scrupulously clean, and the milk fresh and warm, at blood heat. Unclean pails, overfeeding, and cold or partly soured milk are sure to bring trouble.

After the calf is ten or twelve days old, gradually replace with skim milk an increasing amount of the whole milk, substituting for the milk-fat concentrated feed. At first it may be best to mix with the milk a little ground flax seed made into a jelly with hot water, or some low grade

What is Gained by Testing Cows



Testing your cows tells whether they are earning money for you. By the Register of Merit work you can now build up your herd from animals of known production. Science is driving guesswork out of the dairy business. Government records show that the average net profit per cow was increased 129% in eight years by testing. Selection based upon actual dairy merit will produce like results in your herd. Our booklet, "What is Accomplished by Testing Cows," will help you. Send for it now. It's free.

**The American Jersey
Cattle Club**
38 West 23rd Street
New York City



flour, but at three weeks the calf should be getting its grain dry. This may start with a little bran and oil meal together with corn meal or

ground kaffir or sorghum, but the grain may soon be fed without grinding except possibly in the case of the small hard grains.

After the calf is about three weeks old keep clean bright hay, preferably alfalfa, before it. After six weeks do not increase the milk or grain, but feed more hay; alfalfa has an excellent effect on the calf's system, and develops its capacity for handling lots of roughage.

Have all feeding regular, and make any change gradually. Provide clean comfortable quarters, with opportunity for abundant exercise, plenty of pure water, and salt always accessible.

The heifer should not be bred to freshen under two years, and the second calf should come after a period of more than a year, so she can finish her growth.—R. W. Latta.

CLEAN MILK HINTS

According to the Utah Agricultural College, the following are the essentials for the production of clean milk:

- Healthy cows;
- Clean cows;
- Clean surroundings;
- Clean milker, cleanly clothed;
- Small topped pail;
- Pails, strainers, and containers smoothly made;
- All utensils properly cleaned and sterilized;
- Cooling of milk immediately after milking;
- A clean mil. house or place for keeping the milk.
- An abundance of sunlight in and about the stables and milk rooms.

WHAT KIND OF SILO WOULD YOU BUILD?

This question is often asked. So that our readers can have the experience of others we give the following report as secured by a county farm agricultural agent, Paul V. Maris:

Special agents promoting special kinds of silos have gone about denouncing other silos until all have been alike praised and condemned. Disinterested authorities have long since assured farmers that wood, stone, brick, tile, steel or concrete may be used in constructing silos that will serve equally well in the preser-

vation of silage if properly constructed and finished.

Every kind mentioned, with the exception of stone, is now in use in Saline county and keeping silage satisfactory, still we encounter such statements as, "I would build a certain silo if I thought it would keep the silage." There is no ground for such suspicion. It has been created and kept alive largely by the motive of selfish interest.

Since silos, made of different materials will keep silage, cost durability and attention required to keep the building in repair become determining factors.

The owners of 95 silos in Saline county were asked the question, "If you were building another silo what kind would you build?" The replies are shown in the following table. Of the entire number it will be seen that 7 were undecided. Of the owners of 45 stave silos, only 5 say that they would rebuild staves, 34 express a preference for concrete. Of the 28 owners of solid concrete silos all save one would build the same kind and this one undecided.

Summarizing the whole—Of the owners of 95 silos, 7 are undecided, 6 in favor of the stave, 76 in favor of the solid concrete, 1 in favor of tile, 2 prefer concrete stave and 1 brick.

The silo listed as "emergency" is made of 1x4 flooring and as its name suggests may be put up to meet a sudden or temporary need.

The computation is made on the basis of cost per ton for purpose of eliminating the differences in size. It will be seen that the cost for stave silos on the average is \$2.81 and the cost for concrete \$2.56. However, larger silos are built at a lower cost per ton capacity than small ones. In other words, you can build storage capacity cheaper by building big silos than small ones.

It is, however, necessary to maintain a certain relation between the diameter of the silo and the number of stock to be fed from it as shown in a table published on this page. This is of less importance when the feeding is to be done during the winter months as the silage will not spoil on the surface as rapidly in cold as warm weather.

KIND WOULD ERECT IF REBUILDING

Kind of Silo	No. Silos	Undecided	Stave	Concrete	Tile	Concrete Stave	Emergency	Common Sense	Modified Gurler	Brick	Steel
Stave	45	3	5	34	1	1	0	1	0	0	0
Concrete	28	1	0	27	0	0	0	0	0	0	0
Tile	4	0	1	3	0	0	0	0	0	0	0
Concrete Stave	2	1	0	0	0	1	0	0	0	0	0
Emergency	7	2	0	5	0	0	0	0	0	0	0
Common Sense	5	1	0	4	0	0	0	0	0	0	0
Mod'd. Gurler	2	0	0	2	0	0	0	0	0	0	0
Brick	1	0	0	0	0	0	0	0	0	1	0
Steel	1	0	0	1	0	0	0	0	0	0	0
Total	95	8	6	76	1	2	0	0	0	1	0

THE RIPENING OF CREAM

By the ripening of cream is meant the changes it undergoes from the time of separation until it is added to the churn. Upon these changes depends very largely the quality of butter as regards texture and flavor. The temperature at which cream is held determines the firmness or tex-

ture, while the flavor is dependent upon the by-products from the bacterial growth.

The purpose of ripening cream is fundamentally that of giving the butter the desired flavor and aroma, but in addition it increases the ease and efficiency of churning. Cream is ripened in one of two ways:

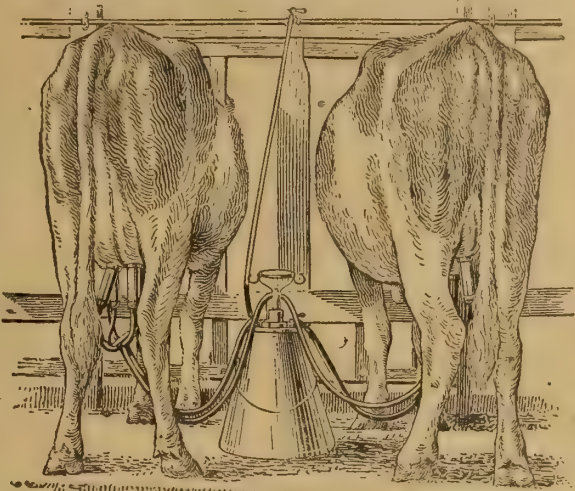
First, it sours or ripens as a result or,

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of the action of bacteria which are normally present in milk and cream; Second, it ripens as a result of action of certain kinds of bacteria which are added in what is termed a "starter."



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COST OF BAD ROADS.

Did you ever think about the cost of bad roads, as it might affect your teams and vehicles or your automobile. About the "wear and tear" caused by a rough road over which you must travel in order to reach your markets?

What you and your neighbors will lose on a poor road would soon put it in good shape—would build a new road. The time saved, the satisfactory service of a good road are only other reasons why we should have no bad roads.

It costs but a little to keep good roads in repair if one works at the right time. It costs a great deal, to even keep in passable condition, bad roads.

LIKE BEGETS LIKE.

Every seed brings forth fruit after its kind. Wheat does not grow chaff, corn is not parent to smut, we do not gather grapes off thorns.

It is as true of deeds as of seeds. Our attitudes, our actions are recoined into similar attitudes and actions in those about us, whether men or animals.

Hatred and vengeance are the fruit of hate and abuse. Mistrust arouses mistrust, anger provokes wrath, but soft speech turns it away. A frown wins frowning company.

Ideals inspire high aims, enthusiasm quickens fire in others. Kindness begets kindness, joy creates pleasure all around. Love is the child of

kind feeling. The seed of truth will grow a life of integrity.

What tales of abuse can be read in the mean and vicious animal! The kindly obedient fellow has always whinnied with gladness at his master's voice.

BLACKSMITH SHOP SAVES MONEY.

The help that a small blacksmith shop can be to the farm is best known to those who have one and use it. It is always a good indication that the farmer believes in spending his winter days when weather is bad, repairing his farm tools and machinery.

Nowadays a farm blacksmith shop may be well equipped for ordinary work at a very low cost, and the convenience or the necessity of a forage on the farm needs little argument. The time that may be saved by having the necessary equipment with which to repair damages to machinery and tools is often a more important item than the cash saved by doing one's own work.

It is one of the best investments on the farm—the blacksmith shop. It helps to make profitable spare time and in the rush season saves time and time is money. Build a shop and equip it as your needs require.

FARM INVENTORY.

The end of the year will soon be here, and if the farmer will follow the example of the successful business man, he will take an inventory. The farmer, who does not take an inventory, has no starting place for a good system of farm accounts. How can you know the success of the year's business, if no inventory is taken. The cash balance can not give you the information wanted.

Too many farmers do not pay enough attention to the business side of farming. Know your costs. Find out if any particular area of land is paying you—and you can only do it by keeping accounts. A great many details are not necessary. A simple accounting system can be secured from the Agricultural College or Government that will greatly help. A book with all the details outlined; all you have to do is fill in the figures. Now is the time to plan to do this work for next year. Get busy now and secure a book and take inventory at first of the year.

MARKETING FAT HOGS.

Local feeders have not had as much experience in fattening and marketing hogs as some of the older districts, where this has been a part of their farm practice for a number of years. It seems to be the opinion of most men who have had experience that the greatest profit is in producing hogs to a certain age and weight, and the feeding after this point is not so profitable.

There is quite a gamble in holding hogs after they are ready to kill. Prices may advance enough to make it profitable. They may not, also.

We are told that some stock hogs have been sold as low as six cents a pound at loading points. This, we think, a mistake, because they should be properly fed and fattened before marketing.

The man who is making money in the hog business is the fellow who keeps persistently at it, studies the market, and has his hogs fattened and ready when the best prices prevail. There is money in the hog business, and we suppose that experience will be the greatest teacher of how we can best make money producing and fattening hogs.

BLACK LEG VACCINE.

During the past week we have had three letters from different sections of the State, telling us that they have Black Leg among their stock, and asking where and how they can procure vaccine.

This can be secured from the U. S. Department of Agriculture, who have a branch office in the Federal Building, Salt Lake City, Utah. We understand that this will be furnished without cost. Instructions how to use it will be sent out with the vaccine. It will be necessary for you to write to them, giving the number of animals on which you want to use it.

Our Government is very good in helping the farmer and livestock man, but there are certain requirements that must be followed, in order that one can secure the benefit of government aid.

We suggest that anyone who has Black Leg on his farm, or wants to know more about this, to write to the Bureau of Animal Industry, Federal Building, Salt Lake City, Utah, for information concerning Black Leg, and it will be sent him.

ABOUT OUR TAX MONEY

We have heard a number of people during the week discussing the tax question. People who had the taxes reduced last year as compared to the previous year are exceedingly scarce. You find plenty who had them raised. For this increase of revenue what are we getting? When a larger amount is paid out, naturally we expect a better and more efficient service. Are we getting it.

People generally are not adverse to paying a good salary to a person who performs a real service, but they are against the system that pays out money when practically no service is given. When the head of any department, whether large or small, neglects his duty, his work, sluffs it off onto a deputy or assistant, while he, the department head, goes off on private business, he should be called onto the carpet.

What the people want to know, is, where the tax money is going? Are we getting "value received?" The day is past when the people's money can be spent in any other way except to bring the best returns, just the same as any other big company would expect of its officers.

FARM MANURE.

Some farmers have learned the value of manure. The help it is to the soil, what it will do to increase the crops. Manure is the greatest available resource for maintaining soil fertility.

Recently, when discussing why a certain man had such a good yield of sugar beets, one man said: "Why that fellow hauls manure all winter—from any place he can get it." When this farmer was questioned as to whether it paid him to spend his time hauling manure, he was able to very nearly tell just what increase each load of manure brought to him in the way of increased tonage. What our soils need is humus. Soil experts tell us we have plenty of lime in our land, but what we need is plenty of good manure.

A great deal more manure could be "made" for every farm, if a little study was made of how to do it. Take the question of liquid manure, if you do not have a concrete vat to hold it, use plenty of bedding such as straw and let this soak it up and it will answer the same purpose to a great extent. The important problem for every farm is its fertility, and plenty of farm manure will be the greatest help.

**SOMETHING ABOUT POTATOES
THEIR FOOD VALUE**
(Continued from page 3)

to be followed by a salad.
Cook and mash potatoes and add enough cream to make them as smooth as velvet. Butter small muffin rings, fill them with the potato, and bake for thirty minutes in a rather hot oven.
To enhance flavor and food value, put a tablespoon of cheese in the muffin ring before putting in the potato. To make them light and puffy and almost like angel cake, add one beaten egg white to potato for a half dozen muffins. To make them somewhat like the unsweetened custards used often for garnishing fish especially, use the egg yolk instead. Serve these latter with a white sauce and fish.

Potato au Gratin

Cook and mash or rice three medium sized potatoes, season, and add butter, and then stir over fire for a few minutes with a little milk if you have not the richer cream. Take from fire, add an egg yolk and stir thoroughly. If this thickens them thicker than a muffin batter, add a little more milk. Put the potato into a buttered baking dish. Smooth over carefully, and then, if you choose, hold a knife so that the point will remain at the center and go all the way around the dish making spoke-like indentations with the back by pressing down. Sprinkle with cheese, rather dry American grated then dot with a few bits of butter and put under the broiler or in a hot oven three, or four minutes to brown.

Egg In Potatoes.

Fill the skins of three baked potatoes with a spoonful of mashed potatoes, making a hollow in the center of each. Break an egg into these and place in the oven to set and brown. Serve on a white dish and garnish with parsley.

Potatoes Italienne—Dice five medium sized cold boiled potatoes; mince two sweet red peppers, place in a saucepan with one cupful of hot rich milk, season with one teaspoonful of salt and cook slowly for twenty minutes. Carefully blend two table-spoonfuls of melted butter with one tablespoonful of flour and stir into potatoes until evenly taken up. Turn

mixture into a baking dish, lightly sprinkle with grated cheese and minced parsley, cover dish and place in moderate oven for fifteen minutes. Serve in baking dish.

Potatoes Bordeaux.

Peel three large potatoes and cut as for French frying in pieces about one and one-half inches long. Finely mince one medium sized onion and one ounce of lean salt pork. Have ready four teaspoonfuls of melted butter in a hot pan. In it place the onion and meat and brown to a rich golden color. Then add the potatoes and one bay leaf, seasoning with one-half teaspoonful of salt and one-quarter teaspoonful of white pepper. Mix well, add one-half cupful of hot water, cover the pan and boil for twenty minutes. Serve garnished with chopped parsley.

Potatoes Grecian Style.

Peel and carefully wash six large, sound potatoes. Place in a roasting pan, covering each potato with a thin slice of bacon. Bake in a moderate oven for thirty-five minutes, turning them over frequently in order to insure even baking on all sides. Remove from oven, take up one at a time with a towel and remove the centers with an apple corer. Have ready one cupful of finely ground raw beef, stuff centers with the meat, close each end of the potato with a small piece of the scooped-out center, replace in the roasting pan, sprinkle lightly with salt and black pepper, dress with melted butter and return to the oven to bake for twenty-five minutes. Serve with parsley.

POPULATION AND FOOD SUPPLY

The statement is frequently heard that the growth of population in this country is in greater ratio than the supply of food products. There is no occasion for alarm, however, as this statment is not borne out by the facts in the case, according to a recent report from the United States Chamber of Commerce.

During the last fifty years, while the population increased about 200 per cent the production of wheat increased 560 per cent, corn increased 270 per cent, oats 475 per cent, barley 2,000 per cent, Irish potatoes 250 per cent, rice over 3,000 per cent.

Exports of wheat have gradually increased during the last five years. More uses at home have been found for corn, which accounts for the decreasing exportations in this crop. Importations of corn from Argentina are so small as to be almost negligible.

Surely these figures put at rest any apprehension caused by the calamity howler. They are especially significant to us as manufacturers of farm implements. The fact that during the last fifty years our agricultural products have greatly increased, despite a great decrease in agricultural population in proportion to the total population, can be attributed only to the use of labor saving machinery. Modern farm implements make our present day civilization possible. Therefore a decrease in the output of these implements would be a real calamity, for it would result in a decrease in the food production of the world.

If you have difficulty in trying to find something that will cement up the holes in your enamel ware try equal parts of putty, finely sifted coal ashes and table salt; mix all these well into the hole. Place pan on the stove with a little water in it until the cement hardens.

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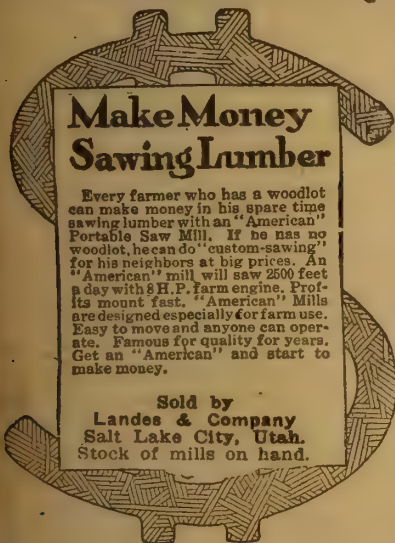
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Questions and Answers

Pleasant Grove, Utah,
December 5, 1916.

Editor of the "Utah Farmer:"

Dear Sir.—On the editorial page of the Utah Farmer of December 2nd, as has appeared also in previous editions, we find an editorial on "Raise more live-stock." You give reasons why more live-stock are necessary and profitable on the farm. You ask why don't more farmers make a business of feeding their hay and grain on the farm.

Nearly every farmer, in this day and age are aware of the fact that live-stock are not profitable in most cases, but an absolute necessity in the long run. But in spite of this many farmers raise few or no live-stock at all. The reason is, I believe, because range room is getting scarce. Farmers in our locality are only allowed to graze eight or ten head of cattle apiece. And in Utah we have hardly reached the stage where we can feed cattle at home the year around and make anything out of it. Probably others will disagree with this statement. If they do I wish they would discuss the question through the Utah Farmer. Its an important question and I would like to find out some plans whereby a farmer can keep more live-stock. We are living in a "day a change" in Utah. We will have to adapt ourselves to new ways of doing things if we intend to win out. Surely there

is some way, that a farmer can profitably keep more live-stock.

Kindly print a few articles on this subject. Yours respectfully,

Reed W. Warnick.

(Will some of our readers give their experience in feeding cattle. Editor.)

Utah Farmer: Neola, Utah.

Dear Sir:—Please tell me of a remedy for curing or treating a swollen knee joint. When the animal is in use, knee and leg bone swells, but when not in use goes down.

J. Wm. Workman.

Answered by Dr. H. J. Frederick.

Sprained Muscles or Tendons:

Where swelling exists around and above the knee this is usually due to an injury to the muscle or tendon. In order to overcome this trouble absolute rest is necessary, because if the animal is worked every time Nature has performed its work to overcome this trouble it is broken up again by exercise. A good stimulating linament along with the rest applied to the part by a brisk rubbing should help in overcoming it. A linament consisting of the following can be recommended:

Stronger water of ammonia.....1 part
Turpentine.....1 part
Cotton seed oil.....4 parts
These ingredients are mixed together and applied to the enlargement by a brisk rubbing twice a day. In connection with this it should be remembered that absolute rest along with this treatment is essential for overcoming the trouble.

Utah Farmer: Delta, Utah.
How much flour is made from a bushel of wheat?

Lyman Molton.

Answered by Dr. F. S. Harris.

The amount of flour that can be made from a bushel of wheat depends on the milling quality of the wheat and efficiency of the mill. Usually from 60 to 70 per cent of the weight of wheat can be made into flour, although it sometimes runs higher than 70 and lower than 60 per cent.

Since there are 60 pounds in a bushel of wheat, the pounds of flour that would be made from one bushel would vary from about 36 to 42 pounds.

IRRIGATORS QUERIES ANSWERED

O. W. Israelsen.

What water measuring device do you consider best for Utah conditions?

The recommendation of one water measuring device for all conditions in Utah would be folly, since the kind of device to be used depends on the particular conditions under which it is used. For example; the trapezoidal weir, which is possibly the simplest and cheapest device on the market, may in some localities be entirely useless. A weir measurement cannot be made unless there is sufficient fall in the land to permit the water to flow down over the weir freely, without the water below the weir backing up so as to prevent a free air current going underneath the stream near the weir crest. For conditions of this kind, a submerged orifice, used by the United States Reclamation Service, is frequently very suitable. Some modifications of the submerged orifice are now being made, where a head-gate and water measuring device is



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STATE IRRIGATION AND DRAINAGE CONGRESS

A call is being made by the agricultural college for all those interested in the important subject of Irrigation and Drainage, to meet at Logan, January 21st, at the Farmers Convention.

The opinion is general that some organization is necessary through which the existing information on this subject can be formulated, and by which a movement toward better irrigation laws can be started. Professor O. W. Israelsen, in charge of the Department of Irrigation and Drainage at the Utah Agricultural College, has been most active in formulating the plans for the present congress. In discussing the need for such a convention he said: A decided opinion exists throughout the State that there are a few vital questions concerning irrigation and drainage that are of sufficient importance to warrant, beyond doubt, the gathering of the irrigators of Utah annually to discuss these problems. As a result, it has been decided to hold an irrigation congress at Logan, probably on January 31. The question which seems to demand the attention of the irrigators of the State, and which will be given consideration at the Congress, are as follows:

1. The formulation and discussion of laws that are necessary to properly

govern the distribution of irrigation waters.

2. The need of increasing the duty of irrigation water, with a discussion of methods that can be applied.

3. The need of settlers on new irrigation projects.

4. The drainage of lands now water-logged and the prevention of the water-logging of larger areas.

The International Irrigation Congress has contributed much toward the securing of legislation, both in this country and elsewhere, which has made possible permanent development of western resources. Undoubtedly, therefore, a State Irrigation and Drainage Congress can likewise contribute, in a very large measure, to a solution of some of Utah's problems. It is believed that every irrigator will be interested in the proposed congress. Every canal company operating in Utah should endeavor to have representatives at the convention.

At present in Utah there are approximately but 1,000,000 acres irrigable. This condition, considered in connection with the fact that over irrigation is a very prevalent fault in Utah, makes the problems of better distribution of irrigation water of extreme importance. The Extension Division of the Utah Agricultural College has issued the following suggestions on this point:

"There are four ways by which the present irrigated area of Utah may be increased, they are:

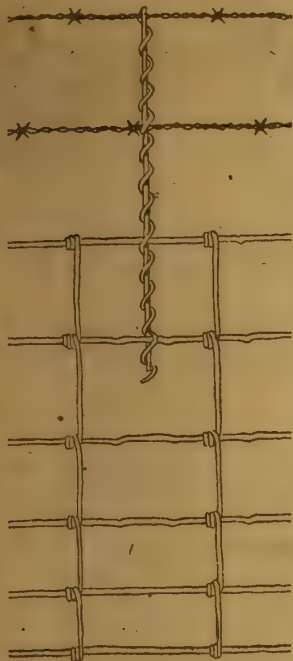
1. By making better use of the water in gravity canals.

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2. By pumping for irrigation water in the lowlands, and by using the mountain streams in the highlands.
3. By storing the flood water in the soil and reservoirs.
4. By draining water-logged, waste, and pasture lands.

BILLION DOLLAR MANURE LOSS.

It is estimated by the United States Department of Agriculture that over two billion dollars worth of manure is produced annually in this country and that over half is lost through carelessness.

A billion dollars is such a stupendous amount that to most of us it is difficult to comprehend unless translated into familiar terms. A billion dollars is sufficient to build hard roads ten miles apart from east to west and north to south over our entire country and still have a few millions left over. Think of it.

This great leak is due to loss of liquid manure and exposure of manure to the weather. Liquid manure may be saved by a system of drains and concrete pits or cisterns. Where this is not practical, liberal bedding will absorb most of the liquid manure.

The common practice of storing manure by throwing it on a pile outside of the barn door is also the cause of much waste. Manure exposed to the weather will soon deteriorate. Results from the Maryland Experiment Station show that 80 tons of manure, exposed to weather for one year, reduced to 27 tons.

If it is not possible to store manure under cover it should be hauled directly to the fields as soon as it is made. This is the cheapest method anyway as the manure needs to be handled only once.

A good manure spreader is about the most profitable investment a farmer can make. By having it near the barn manure can be dumped directly into it and hauled to the fields daily. A good spreader will distribute a load in three minutes much better than can be done in twenty minutes by hand. The manure is pulverized and evenly spread which makes it quickly available for plant use. The spreader also removes, to a large extent, the disagreeable features of handling manure.—Plow and Tractor.

BALKY DRIVERS.

I. D. O'Donnell.

You have heard the old saying, "There are more balky drivers than balky horses," and it is at this season of the year that the truth of this statement is "rubbed in." Many a farmer has been demonstrating this the past two months. As spring comes on the farmer who has rested and fattened up takes on a sudden spurt of energy and activity. His first idea is usually to hitch up the team and do something he should have done last fall. He interrupts the attempts of the horses to get a living from the corn-stalks and straw stacks, hustles them into harness grown stiff from nonuse, and make them do three days' work the first day when they are not in condition to live comfortably without working.

Of course the man by his unreasonable spurt makes himself lame in the back and all his muscles, and usually takes on a case of spring "snuffles," but our sympathies are with the horses. Pushed into heavy work without even a few days preparation by feed and care, any horse is in bad shape to stand the hard strain of field



POWER

Plow deep if you want to increase the fertility of your soil. Subsoil, if you want to break up the hardpan. Build gopher ditches if you want to drain. But you must have POWER—unusual power—for this heavy work.

You can't do such work with horses. You can't do it satisfactorily with other tractors. With the Caterpillar you CAN do it. The Caterpillar has the POWER for heavy work, the dependability that makes the work run smoothly, saves delays, at a minimum cost for operating and upkeep.

Holt construction explains why the Caterpillar wins out in competition—explains why the Caterpillar saves money for the farmer by doing more work at less cost—explains Caterpillar endurance—explains why the Caterpillar

was awarded the Grand Prize at both California expositions.

Catalog 343 tells you the things you want to know about tractors and about the Caterpillar in particular. It tells how the Caterpillar tracks prevent soil-packing, prevent waste of power from slippage. It tells about the famous Holt engine, the simple, easily understood and cared-for construction throughout—in fact the things that have made the Caterpillar the leading tractor in the United States today. Write today for Catalog I E 343.



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THE HOLT MANUFACTURING CO., INC.

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Nothing is more important to the Fur Shipper than doing business with an Honest—Reliable—Responsible—Safe Fur House.

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the largest House in the World dealing exclusively in American Raw Furs, where you will always receive an Accurate and Liberal Assortment, the Highest Market Prices and the usual "Shubert" Efficient, Speedy, Courteous service.

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A. B. SHUBERT, Inc. 25-27 WEST AUSTIN AVE.
Dept. 127 CHICAGO, U.S.A.

spring work. The result is gradual loss of flesh and strength and increasing nervousness for the horse. The farmer then crams into the horse heavy feeds of grain—part of which should have been given before the hard work started—and the condition of the horse is seldom helped, and quite often made worse by the burden added to its digestive organs, which are sensitive at all times. It is from such conditions that what we call "balky horses" are developed, but this term is usually a libel on the horse. When we say "balky horse," we mean "balky driver," if we understand the real cause of the trouble.

To start an unconditioned horse suddenly into heavy work is like starting a locomotive by throwing the throttle wide open—the effect on both is the same. Remember your horse is a highly sensitive piece of machinery and should be treated accordingly. Any lack of care of the horse means a corresponding loss in the efficiency of the horse.

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BUY YOUR PRESENTS
FROM THE

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Tools, Cutlery, Heaters, Ranges,
Cream Separators, Toy Wagons,
Washing Machines, etc.

Make your selection now
and have them set aside for
you until Christmas.

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out of
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or at the
evening
reception



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Cocoa

is
equally

acceptable
invigorating
and
delicious



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ESTABLISHED 1780 DORCHESTER, MASS.

HOME

CHRISTMAS SUGGESTIONS

Miss Gertrude McCheyne of the Utah Agricultural College gives the following recipes and menus for Christmas.

RECIPES

Croutons

Butter lightly on each side slices of bread cut 1-3 in. thick.

Cut into dice and brown in oven.

Cheese Canapes

Cut slices of bread into rings.

Butter lightly on each side.

Brown in oven.

Remove and sprinkle with grated cheese.

Allow to melt in warming oven.

Beet Salad

Cut beets finely.

Mix with hard boiled eggs and put through the chopper.

Sprinkle with grated cheese.

Fruit Cocktails

1. Cut pineapple, orange and grapes into small pieces, pour over the fruit a syrup made from the juice of pineapple and orange, to which add enough lemon juice to give an acid flavor. Sprinkle lightly with paprika.

2. Canned pears cut in dice, black grapes or cherries and small pieces of crystallized ginger.

Carrot Pudding

1 c. bread crumbs, 1 c. carrots, 1 c. raisins or dates, 1 c. suet, $\frac{1}{4}$ c. molasses, $\frac{1}{2}$ c. brown sugar, 2 c. flour, 1 c. milk, 1 tsp. cinnamon, $\frac{1}{2}$ tsp. allspice, $\frac{1}{2}$ tsp. salt, 2 tsp. baking powder, 1 c. lemon-citron, 2 eggs. Steam 2 hours.

English Plum Pudding

$\frac{1}{2}$ lb. bread crumbs, stale; 1 c. scalded milk, soak.

$\frac{1}{4}$ lb. sugar, 4 eggs, $\frac{1}{2}$ lb. raisins, $\frac{1}{4}$ lb. currants, 2 oz. candied peels, add to milk.

$\frac{1}{2}$ lb. creamed suet, $\frac{1}{2}$ grated nutmeg, 1 tsp. allspice, $1\frac{1}{2}$ tsp. salt, 4 egg whites, beat stiff; add to mixture. Steam 8 hours.

SAUCES FOR PUDDINGS

Drawn Butter Sauce

$\frac{1}{2}$ c. butter, 1 tbsp. flour; melt together.

Add $\frac{1}{2}$ c. water, let simmer.

1 tbsp. sugar.

Flavor as desired just before removing from heat.

Orange Sauce

1 tbsp. butter, 1 tbsp. flour; cook together.

Add 1 c. water and 2 tbsp. sugar.

1 tsp. grated rind of orange.

1 tbsp. orange juice.

SUGGESTED CHRISTMAS MENUS

I.

Oysters on half shell

Clear soup

Turkey

Croutons

Mashed Potatoes

Beet Salad

English Plum Pudding

Sauce

II.

Tomato Bouillon

Crackers

Roast Goose

Hot Apple Sauce

Riced Potatoes

Orange and Pineapple Salad

Carrot Pudding

III.

Fruit Cocktail

Roast Duck

Green Peas

Mashed Potatoes

Lemon Pie

Cheese

Coffee

IV.

Cheese Canape

Roast Beef

Browned Potatoes

Everybody, from Dad Down, Gets Better Wear, Comfort and Looks

No matter whether it's Dad, who plays havoc with socks—mother and the girls who want good-looking hosiery—or the children who require sturdy, wear-proof stockings, Durable Durham Hosiery will give everybody better wear. Durable Durham Hosiery is made strongest where the wear is hardest. The heels, soles and toes are heavily reinforced and the tops are knit on securely. The children's hose has triplereinforced knees that make them wear and tear-proof.

DURABLE DURHAM HOSIERY

FOR MEN, WOMEN AND CHILDREN

is backed by an unlimited guarantee to assure satisfaction. Mothers, take advantage of this chance to cut down darning and knitting, by buying this high quality hosiery that sells for the low cost of 10, 15 and 25 cents. If your dealer doesn't carry Durable Durham Hosiery, tell him to stock it.



Durham
Hosiery Mills,
Durham, N. C.



For your better-than-ever day wear, buy Durable Durham Mercerized 25-cent Hosiery



For Greatest Satisfaction Use
DOUBLE SERVICE
Automobile Tires
Guaranteed 7,000 Miles Service

Absolutely Punctureproof

Double Service Tires are made double the thickness of the best standard make tires.

This 100% greater wearing surface naturally gives them much more mileage and service. The average of 12 miles of tough

fabric and one inch surface tread rubber makes these tires absolutely punctureproof. These tires excel all others for use in the country over rough and rutted roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—the air space and pressure being the same.

They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use by the U. S. government and European War service. Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an introductory offer:

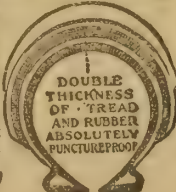
PRICES

Tires Tubes		Tires Tubes	
30x3 in.	\$ 8.60 \$2.30	36x4 in.	\$17.45 \$4.65
30x3 1/2 in.	10.85 8.10	36x4 1/2 in.	21.20 6.60
32x3 1/2 in.	12.75 3.20	38x4 1/2 in.	22.50 5.75
34x3 1/2 in.	15.75 4.20	38x4 3/4 in.	23.60 6.20
34x4 in.	16.70 4.55	38x5 in.	25.00 6.50

All other sizes not included in above list also furnished. Non-skids at 10% additional. Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.

Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Descriptive folder upon request. Write for it.

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Salt Lake City to
LOS ANGELES



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Or Address

WM. WARNER, A. G. F. & P. A.
Salt Lake City, Utah.

Celery Salad Creamed Cauliflower
Hot Mince Pie Cheese
Fruits, candies, grape juice. Serve
after leaving table.

Lemon Pie (Southern Recipe)
1 c. sugar, 1 c. water, 1 tsp. butter,
boil together and allow to cool.
2 egg yolks, beat well.
Add 2 tbsp. flour and grated rind of
one lemon.
Stir liquid into egg mixture.
Make meringue of egg whites.

DRESSINGS

Duck and Goose

Boil two medium sized onions until
tender, mash and add 2-3 cups bread
cumbs. Season with sage, pepper and
salt.

CHRISTMAS RECEPIES

Cranberry Tarts.

Roll pug paste a little less than
one-fourth of an inch in thickness.
Cut in rounds and fill with the fol-
lowing cranberry mixture: Mix one
and a quarter cups of chopped cran-
berries, one-half cup of chopped
raisins, one cup of sugar, one-half
cup of water and one tablespoonful
of butter.

Stuffed Sweet Potatoes.

Bake a number of smooth, medium-
sized sweet potatoes, remove from
oven and peel off the skin. From
one side of the potato scoop out
enough to leave a good sized cavity.
Mix this pulp with one cupful of
nice pork sausage, from into balls
and place one in each potato. Brush
the entire potato over with melted
butter and sugar; replace in hot
oven and bake till the sausage filling
seems done. Serve hot.

Salad.

Cut equal amounts of apples and
celery into cubes. Sprinkle with
lemon juice, and let stand until
cold. Mix one-half cupful of peanut
butter with three-fourths cupful of

cold mayonaise. Arrange apples and
celery on crisp endive, and decorate
with stars of dressing. Chopped
olives and pimentos over the dress-
ing make this an attractive Christmas
salad.

Butter Honey Cake.

One and one-half cups honey, one-
half cup butter, three egg yolks, five
cups flour, two teaspoons ground
cinnamon, one-half teaspoon salt,
one and one-half teaspoons soda, two
tablespoons orange flower water
(water may be substituted), whites
of three eggs. Rub together the
honey and butter; add the unbeaten
yolks and beat thoroughly. Add
the flour sifted with the cinnamon
and salt and the soda dissolved in
the water. Beat the mixture thor-
oughly and add the well beaten
whites of the eggs. Bake in shallow
tins and cover with frosting made as
follows:

Frosting.

Grated rind one orange, one tea-
spoon lemon juice, one tablespoon
orange juice, one egg yolk, confec-
tioner's sugar. Mix all the ingredi-
ents but the sugar and allow the mix-
ture to stand for an hour. Strain
and add confectioner's sugar until
the frosting is sufficiently thick to be
spread on the cake.

Pineapple Tarts.

Make the desired number of pastry
cases. Fill with the following mix-
ture; chop the contents of one can of
pineapple fine. Put the syrup into a
small saucepan with eight lumps of
sugar and boil until thick. Pile up the
pineapple in each case, pouring over
a little of the syrup. Whip up the
whites of two eggs to a stiff froth,
add two tablespoonfuls of sugar and
beat again, then add one teaspoonful
of vanilla extract. Heap this meringue
over the pineapple, dust well
with sugar, and set the tarts in a
cool oven till the meringue is set and
of a light brown shade. Put one or
two preserved cherries or crystallized
violets on each to give a pretty dash
of color.

CHRISTMAS CANDIES

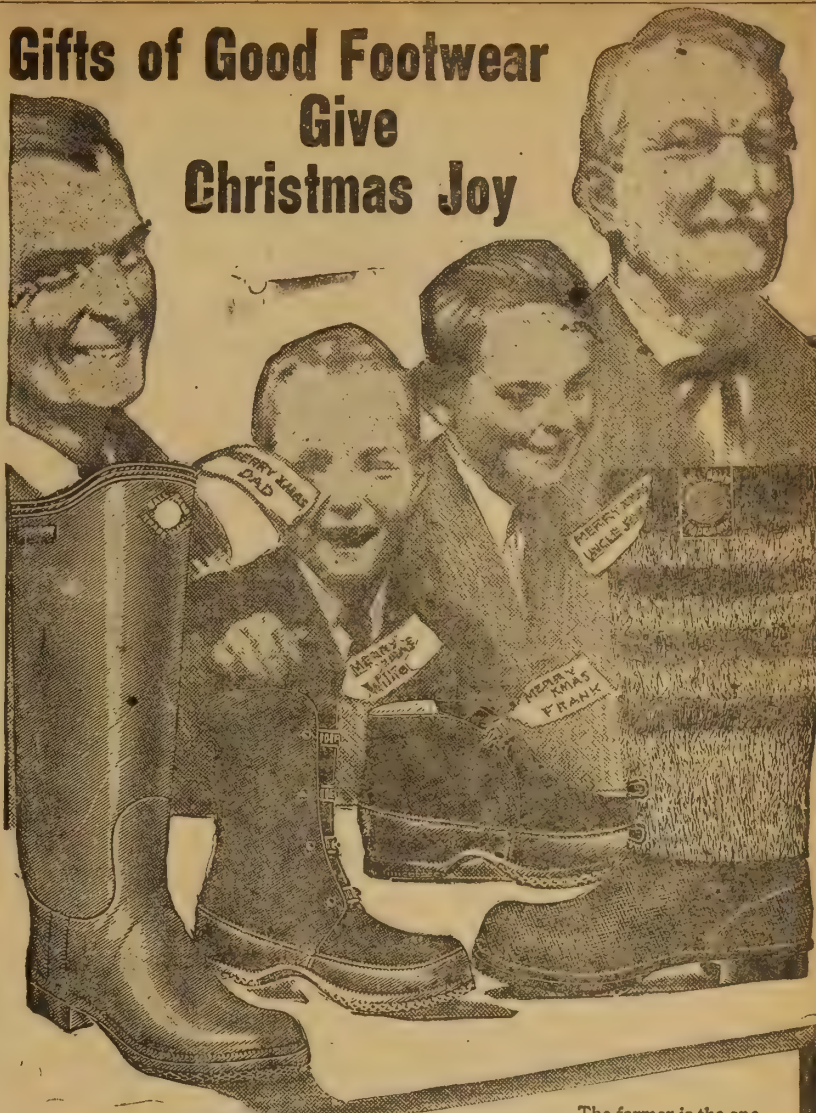
To make fondant add 1½ cups of
water and one-quarter teaspoon of
cream of tartar to five cups of sugar.
Stir until the sugar is dissolved, but
no longer. Cook slowly to the soft
coffee creams, caramel creams, after-
dinner mints, cocoanut creams, cinna-
mon balls. Different flavors, colors
and combinations with nuts and
fruits give further variety.

For the creams of different flavors
shape the fondant and work in the
desired flavoring. For fudge, when
the syrup is placed in a platter to
cool, cut the chocolate in small
pieces and add to the syrup, let it
melt, and when beaten makes deli-
cious fudge. For cinnamon balls shape
the fondant and roll in powdered
cinnamon. For caramel creams flavor
with caramel. This flavoring may
be made by melting sugar, then add-
ing water, and cooking until it be-
comes a thick syrup. For chocolate
creams melt bakers' chocolate and
dip into it the cold fondant which
has been shaped.

After-dinner mints may be made
by melting the fondant in a double
boiler. Add oil of peppermint to
taste, then drop the melted fondant
by spoonfuls on oiled paper. Never
cook the fondant directly over the
fire, but melt over hot water. Keep
the top over the vessel so evaporation
will not take place too rapidly.

Fruits and nuts are especially good
when dipped into melted fon ant, and
white grapes treated in this way give

Gifts of Good Footwear Give Christmas Joy



The farmer is the one
man who has not fallen into the
habit of giving useless things for Christmas.

For men and women as well as boys and girls, "Ball-Band"
Rubber Footwear means dry, comfortable feet.

"Ball-Band" makes an especially sensible and valuable
Christmas present because of its high quality.

It looks its quality when new, and proves its quality when old.

"BALL-BAND"

The younger boys will be proud of their "Ball-Band" Footwear. They
have seen the older men wear it, and they want it for that reason.

If your hired hand does not know that "Ball-Band" gives more days
wear at the lowest cost per days wear, give him a pair and let him see what
a real saving rubber footwear quality means.

"Ball-Band" Light Weight Rubbers for all the family have the Red
Ball on the sole and "Ball-Band" Quality all through them. Look for the
Red Ball before you buy. It is the "Ball-Band" Trade Mark.

Your dealer will supply you. Sold by 55,000 dealers and worn by over
nine million people.

If Your Merchant Does Not Sell "Ball-Band," Write Us

Write anyway for Free Illustrated Booklet showing many different kinds
of Footwear, any of which would make a sensible gift.

MISHAWAKA WOOLEN MFG. CO., 370 Water Street, MISHAWAKA, INDIANA
"The House That Pays Millions for Quality"

a dainty touch to the Christmas can-
dy box.

Butter Scotch.

One cup of sugar, one-quarter cup
of molasses, one tablespoon of vine-
gar, two tablespoons of boiling water,
one-half cup of butter. Boil together
until the mixture becomes brittle

when tried in cold water; then pour
into well-buttered pans.

Pulled taffy may be made of two
cups of sugar, one-half cup of vinegar,
two tablespoons of butter. Boil until
the mixture becomes brittle in cold
water. Turn on a buttered platter to

(Continued on page 14)

Children Require Pure Sugar

The situation in Berlin, as
shown by the accompanying
dispatch, emphasizes the fact
that sugar is now an indispens-
able food product for all classes.
No other palatable article of food
is furnished the public contain-
ing the same amount of energy
and food value per pound, for
a price equal to that paid for
sugar.

LACK OF SUGAR

INCREASES MORTALITY AMONG CHILDREN

When ordering sugar it's im-
portant to say "Utah-Idaho."

London, Dec. 5, 7:20 a. m.—An
Investigation into the increasing
infant mortality in Berlin has es-
tablished that the rising death
rate is due to an insufficient sug-
ar allowance, according to an
Amsterdam dispatch to the Ex-
change Telegraph company. The
dispatch says that it has been de-
cided that each child born after
December 1 shall receive an addi-
tional half pound monthly of sug-
ar.—Deseret Evening News.

UTAH-IDAHO SUGAR
ABSOLUTELY PURE

Save Your Shoes



With the high price of leather, it's important to make your shoes last as long as possible. By applying

DUCK-BACK Shoe Oil

additional life and strength is given the leather of your shoes. It also makes them water-proof, keeping the feet dry and warm, and giving added comfort. The cost is small. Get a can today. Be sure to say "Duck-Back."

Utah Oil Refining Co.
Refiners
Salt Lake City, Utah

TAKE THE TIME

Investigate this exceptional buy now.

This section is and will in the future be the banner farming section of the State. It will pay you to look it over.

50 acres of very fertile land at Elberta, Utah. Raises all crops successfully.

Within short distance of two good mining camps. Good market for all garden truck.

On railroad giving excellent facilities.

Prior water right at \$1.00 per acre if used.

Write us today or see

W. C. ALBERTSON

604 Dooly Bldg.
Salt Lake City, Utah.

Cows require a great deal of water, and as this may be obtained on most farms without very heavy expense, the pasture should be provided with an abundance of good fresh water.

Live Stock

THE BEST HOG FEEDS.

In my opinion some of the best hog feeds available are good hog pasture, preferably alfalfa, skim milk, barley, and wheat middlings. This combination, I think, comes near being an ideal hog ration, but sometimes the price of barley and middlings goes too high to be used in producing pork hogs and it becomes necessary to substitute other feeds at less cost. Also sometimes pastures and skim milk are not available and we must substitute something to take their places. When substituting lower priced feeds for higher priced feeds, we must consider other factors besides cost. For instance, 100 pounds of barley contains about 75 pounds of digestible matter and at present retails at about \$1.50 per 100 pounds, making it cost about 2 cents per digestible unit. A low grade of rice middlings may contain only 50 pounds of digestible matter per 100 pounds and retail at \$1 per 100 pounds. The rice middlings would seem much cheaper, but a little figuring would show that both cost the same per unit of digestible matter, and a little further reasoning would show the barley to be considerably the preferable at the above prices and qualities, because in the case of the low-grade rice middlings the hog would be obliged to handle 50 per cent of indigestible matter, which in this case would be largely ash and fiber.

Protein and Carbon.

In the East feed values are based largely upon their protein content. Here high protein feeds are more plentiful and to me it seems more of a problem to find low-priced carbonaceous feeds.

Barley is unquestionably one of our very best hog feeds, and we know that barley-fed pork is good pork. Before substituting another feed for the barley part of the ration we should be very sure that the substitute will prove an economy.

Corn has a slightly higher feeding value than barley, but is usually so much higher priced that I use it only with pigs just before and after weaning.

Egyptian corn, milo and feterita are very good hog feeds, highly carbonaceous and practically equal to corn or barley, but in the market are usually higher priced than barley.

Skim Milk Is Good.

To do their best growing pigs must have some protein of animal origin. Probably the best source of animal protein for pigs is skim milk. I have never found another animal protein to fully take the place of skim milk for growing pigs. It is my opinion that most dairymen greatly undervalue their skim milk. Skim milk seems to have a value for growing pigs that is not apparent in its analysis. I consider skim milk worth from 40 to 50 cents per 100 pounds when fed at the rate of not over two quarts per pig per day with suitable other feeds. When I run short of skim milk I reduce the daily allowance even to less than two quarts per pig per day, and when necessary I add tankage. When the Wisconsin station fed even as little as one teacupful of skim milk per pig per day the results in favor of skim milk were noticeable.

SUGGESTIONS FOR PREVENTING HOG CHOLERA

The following suggestions for preventing hog cholera are given by Dr.

H. J. Frederick, of the Utah Agricultural College.

Do not have hog lots next to highways, railroads or streams. If your neighbor's hogs have cholera, do not allow anyone from his farm to visit your farm, and especially your hog lot or pens, and keep away from your neighbor's hog lot, whether his hogs have cholera or not.

Do not keep pigeons or allow them to alight on your premises.

Keep away crows and buzzards. Quarantine all new hogs that are brought to your place, until you are sure they are free from disease.

Do not allow a patent medicine man on your place, for you do not know how recently he has visited a sick herd.

Disinfect your wagon and your own shoes and clothing after hauling hogs to the stock yards or railroad loading pens. Avoid every possible way of carrying infection to your hogs.

"An ounce of prevention is worth a pound of cure," is an old saying, but in this case it is everything.

In case your pigs get sick send for either your Agricultural agent or a reliable veterinarian at once; particularly should this advice be heeded if there is hog cholera in the vicinity.

KIND OF BROOD SOW TO KEEP

It is a good thing to invoice the hog lots once in a while. The dairyman has his milk tests, and records of butter fat to help him determine just which animals he should keep. We hog raisers are forced to compare the records of past performance when we wish to get rid of the aging or otherwise failing brood sows.

I keep the old brood sows as long as they are profitable. They have been tried and the unprofitable ones have been eliminated. I do not keep them if the litters prove small, unthrifty, or uneven, in size or growth. If any sow on my place shows an inclination toward pig eating or chicken killing I get rid of her as soon as she is fattened. It is not worth while to take a chance with her for another year.

Another kind of sow that I always dispose of is the excitable, warlike mother that tries to fight for weeks while her pigs are small. If any of them have developed the habit of lying on their pigs or smothering them in the beds I arrange to get them into the fattening pens. I will not keep the nervous, excitable sow nor the mother that has proven a poor milk producer.

The poor milker is usually a poor breeder, and a farm that is stocked with hogs has no time or feed to waste on a sow that cannot be relied upon.

I have three sows that will be six years of age next spring, but I will keep them another year. Their past performances have shown that they can be relied upon ordinarily. The sow that brings a litter of eight pigs and raises them well is doing all that can be expected of her. These "veterans" that I will keep for at least one year more have been averaging ten to the litter and this average is taken at weaning time.

Where the culling of the older brood sows has reduced the number below what is necessary on the farm, the breeders will have to be recruited from the younger sows. In picking them, as future breeders, their whole family history should be taken into consideration. It is necessary to study the dams as well as the daughters.

I always pick the future brood sow from a big litter. I want big litters, in



Where Profits Come In

The health of the dairy herd, the economy of feeding the quantity and quality of the milk produced, are all questions which determine the size of your profits.

If you read our booklet "Feeding for Results" there are many helpful suggestions about

SUN-RIPE Stock Feed

and what it accomplishes for the owner of milch cows, will be appreciated. We will gladly mail you a booklet if you write for it.



Utah Cereal Food Co.
Ogden, Utah

future, and I believe in heredity. The brothers and sisters of the protective brood sow should be considered. If they are even in size, healthy, thrifty, and quick-growing, these are all points in her favor. The young sow picked as the brood sow for next year need not be fat, but ought to show roominess of body, soundness of build and a general tendency toward further growth. When we pick the gilt that is wide between the eyes, roomy of body and healthy in growth, we don't go far wrong. By keeping a number of the best brood sows each year—as many, in fact, as have shown themselves worthy of being kept—and fill the rest of the number required in the young sows, then if the young sows prove undesirable we can rely on the older ones to recruit the herd.

PREVENTING RUNTS IN

FALL PIGS

Preventing runts in fall litters of pigs is a problem that confronts every producer of pork. Establishing pens of pigs of the same size, not more than 20 to the pen, is necessary. Promised scrappers should be penned in larger pens. It is also desirable that all the pigs should be eating well at weaning time. Grain, one pound middlings to 10 pounds of milk, fed in a trough easily reached, will help them to eat naturally. More grain is added until at weaning time the ration is one pound middlings to five pounds milk. At two weeks after weaning, they should be eating about five pounds for each hundred live weight, when, if pasture is available, no further increase is necessary. The animals should be kept free from lice and worms. If this practice is followed, few or no runts will occur.

BLACK LEG LOSSES SORELY PREVENTED
by CUTTER'S BLACKLEG PILLS
Low priced, fresh, reliable, preferred by western stockmen, because they protect where other vaccines fail.
Write for booklet and testimonials.
10-dose pkg. Blackleg Pills, \$1.00
50-dose pkg. Blackleg Pills, \$4.00
No many infector, but Cutter's simplest and strongest.
The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.
The Cutter Laboratory, Berkeley, California



WANTED

Hay, Grain, Potatoes,
Alfalfa and Sweet
Clover Seeds.

Write us

Logeler Seed Co.
Salt Lake City, Utah.

PIANOS

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Daynes-Beebe Music Co. SALT LAKE

ALFALFA MEAL.

I do not allow any of my hogs or cattle on pasture at all, because in my locality the alfalfa gives out very quickly when pastured and weeds take its place. Instead of pasture I feed alfalfa meal to hogs of all ages. Very little to young shoats and making it a large part of the ration of mature breeding stock.

I feed meal rather than hay because there is no waste in feeding alfalfa meal as there is in feeding hay.

With growing and fattening hogs over 100 pounds in weight I can use as much as 20 per cent alfalfa meal in the feed mixture very economically without waste, whereas if I try to feed it in the form of hay they will consume much less and are very apt to waste much of it.

Alfalfa is one of our best and cheapest hog feeds and we should substitute it as largely as practical in place of the higher-priced concentrates.

Pasturing Pigs.

Those who are so situated that pasturing is practical should pasture, and those who cannot pasture can feed either alfalfa hay or meal. Where plenty of alfalfa is fed the hogs are not much in want of mineral materials such as ashes, lime, etc.

In conclusion I wish to emphasize that in substituting feeds for hogs we must consider not only the first cost of feeding materials, but also their comparative nutritive values, their effects on the quality of the finished pork, and their effects on the breeding powers of breeding animals.
—Jacob Strovens.

ELECTRIC MOTOR HELPS

FARMER MEET DEMAND

Its remarkable flexibility makes it important adjunct of modern farm.

The demand for farm labor increases with the demand for farm produce, and the increasing cost of production and distribution to the consumer. The only way this has been successfully met is by the substitution of motive power for man power.

The portable electric induction motor, whether mounted on skids, truck, or any kind of go-cart, is proving one of the most efficient aids to modern farming. A small coil of wire connects it up, at once, to the farm wiring, overhead or in buildings. If this is single-phase, it will usually be at 110 volts though heavier service may have been provided for, as 220 volts.

Still more flexibility and economy may be had with the three-phase induction motor of either voltage, being wound to suit either system of distribution. For household machines, barn, shop, field machinery, and dairy, the electric jack is a veritable jack-of-all-trades, when it comes to delivering the power.

The sizes found convenient on the average farm, are the fractional horsepower, as 1/2; the 3, 5, and 10 horsepower motors. The first motor will lighten the house work wonderfully; the last size, will do all kinds of grinding, cutting, husking, shelling, milling, hoisting, crushing, baling, splitting, sawing, concrete mixing, etc. The intermediate sizes will be adapted to every variety of work, in the dairy, farm, shop, barn, garden and field. In short, the farmer who has the power will reap the reward and profits that come of applications of efficiency to production.—Wm. S. Aldrich, Colorado A. C.

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Armstrong Machines positively handle every kind of formation in any part of the country!



One man can handle entire outfit. Perfect machine of one half century's experience.

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We are also dealers for the famous Red Jacket "So-Easy-To-Fix" Pumps and Bean Spray Centrifugal Pumps.

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Haven't you felt a little curious to know why so many farmers, mechanics and laborers are wearing

"NEVER-RIPS" and "MADE-RITES"

Isn't it likely that this army of working men have found some features in them that make them superior to other makes? Find out for yourself.

Try a pair of "NEVER-RIP" overalls and a "MADE-RITE" shirt next time you buy work clothes. Then you'll know how much more comfort and service there is in wearing

SCOWCROFT'S

"NEVER-RIPS" OVERALLS

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"MADE-RITE" SHIRTS

Jno. Scowcroft & Sons Co., Mfgs.

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DRAIN and SEWER PIPE

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POULTRY

POULTRY FOR MARKET

How To Make Your Product Bring the Highest Returns.

Prof. Byron Alder Utah Agricultural College.

The successful poultry man must do more than raise good birds for the market.

Profits in poultry raising depend in a large part on the marketing of the products. The producer should study the market demand and produce that which brings the best returns. The retail business or marketing directly to the consumer offers the best opportunities. The parcel post shipment of eggs and dressed fowls makes it possible for the producer to deal directly with the consumer, although they may be some distance apart. The appearance and condition of the product is the first consideration of the consumer. The best always sells first and there is little competition with a product of first quality. Begin marketing the young cockerels as soon as they are large enough to be in demand.

"The methods of killing, dressing and packing, should be carefully considered in order to arrange the product in the best possible manner.

Killing, Dressing and Packing

"Feed should be kept from the fowls for at least 24 hours before killed, and water for at least 12 hours. Unless otherwise demanded the fowls should be marketed undrawn with head and legs left on, but washed clean if a bird were diseased in any way it would likely show on the head or on some of the internal organs. This gives the consumer the best possible chance to determine the condition of the bird at the time it was killed, and the carcass will keep better than if drawn and more or less dismembered.

Dry Picking

"Some markets demand dry picked birds. The feathers should be pulled immediately after killing, while the bird is bleeding before the muscles

set or harden, or it will be difficult to dry pick.

"The bird should then be hung in a cool place and not packed until all the animal heat has left the body. Dry picked birds keep better than those scalded.

Scalding

"If the birds are to be eaten within two or three days after killing, or if they are to be packed in ice, they may be scalded and some time saved in picking. The water should be nearly to the boiling point and the fowls held by the legs, after they have stopped bleeding and immersed three or four times. If they are over-scalded the outer surface of the skin rubs off, giving a bad appearance, if under-scalded, the feathers are hard to pull and there is danger of tearing the skin.

"The carcass should be hung in a cool place until all animal heat is gone, then packed and sent to market."

WARFARE ON LICE

Now is the time to be making the final raids against lice and mites. After the flocks are culled down to those you are going to keep through the winter, take some pleasant evening for going after the lice and scaly leg. A can of melted grease, a can of louse powder and another of kerosene will be the equipment for battle. Part the feathers below the vent and work a little grease among them; then dust the power through the feathers on the other parts of the body. Dip the shanks in the kerosene or brush it well over them to destroy the scaly-leg mite. This will go a long way toward getting rid of two enemies. Next clean the house well and go after every crack and crevice where mites can hide with kerosene, dip or whatever mite destroyer you have the most faith in, but go after them if they have been bothersome through the summer. Mites are not active after frosty weather sets in, so that is the best time to annihilate them.

CHRISTMAS RECIPES (Continued from page 11)

cool. When cool enough to handle pull.

Stuffed Dates.

Remove pits from the date through a lengthwise slit. Roll a long narrow piece of vanilla fondant, lay in the place of the stone, and set the date aside. Peanuts, almonds or any nuts, also candied pineapple and marshmallows make good fillings for dates. Roll the fruit in granulated sugar to neutralize the stickiness of the outside. Keep stuffed dates in tins or ball stage, at 238 degrees F. Wipe down the crystals from the sides of the vessel with a damp cloth wrapped around a fork. When done pour the syrup on a platter. When cool enough to allow the fingers to be held in it, stir with a wooden spoon until it creams. Then knead until smooth. Wet and wring a small towel, place it over the fondant, and allow it to remain there for an hour. This is called the curing process.

Fondant does not become stale when kept for several weeks, but improves with age. It may be made up into a variety of candies; plain creams, fudge, stuffed dates, chocolate creams, fruit centers, maple creams, they will become hard.

"Does your sweetheart know your age, Lotta?"

"Well—partly."

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If you need money for additional improvements to buy livestock or any other purpose let us help you.

Because of our long experience in the land business, we are prepared to give you the best service and protection.

Come and see us or write.

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"Land Merchants"

The firm that is known for the "liberal loan."

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Denver	\$22.50
Omaha or Kansas City	40.00
St. Louis	51.20
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Proportionately low fares to many other points.

"Let's go back east to old scenes and old friends for a good old fashioned holiday visit."

Tickets on Sale,
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Limit 90 days.

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THE BEST \$45.00 strictly all oak tanned western Double Team



Hame tugs, 1 1/2 inch, with three loops and patent buckle. Traces 2 1/2 inches solid single ply, with cockeyes.

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Salt Lake City, Utah

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

Gem Herd of Improved Chester White Swine

This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions of the World's Fair held at Frisco his last year. Both Sire and Dam, still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale at all times.

Address

GEO. H. LAWSHE

Falls City Idaho

THE MALE IS HALF THE FLOCK
White Leghorn cockerels from males with others laying 250 or more eggs a year mated to females laying 200 and more. Few of these cockerels at \$5.00 each means less than half their value. Get yours now.

BATES & SONS

F. D. No. 1—Box 310 Provo, Utah

Lumber cheap direct to you. Pacific Coast Sawmill Co., Portland, Oregon.

FOR SALE

g type Poland China Hogs. Fall d spring Boars, out of some of the st breeding stock to be obtained. rite or call and see them.

H. G. JOHNSON

st Garland Utah

FOR SALE.

JERSEY BULL, "Bucky King," reg. 19533; 3-years old. Price very reasonable. A. O. Smoot, Provo. Reference. All at our farm at Springville.

L. M. GILLIAN.

Send in Your Order for Butter Wrappers Today.

UTAH HATCHED WHITE LEGHORN BABY CHICKS \$11.00 PER 100
Circulars, order-blanks, etc., upon request. Candee Colony Brooders carried in stock.

GLENWOOD EGG FARM
R. D. 2 Murray, Utah

FOR SALE BY THE OWNER

One of the finest large modern new homes in Salt Lake City, including complete and beautiful furnishings. Red pressed brick and red sandstone construction. New and thoroughly modern throughout. 7 rooms on ground floor; space for 5 rooms on second floor. Full cement basement containing complete laundry room, combination living room and dancing hall, \$650 Vacuum cleaning system, Hot Water Heating plant, fruit room, coal and furnace room.

Home is finished throughout in select-ed Oak, Mahogany and Circassian Walnut finish. Handsome electric fixtures made to order. \$1,000 worth of Oriental rugs. Built-in buffet, dressers, bookcases and cabinets. Elegant tile bathroom, four fireplaces. Spacious porches. Plate glass windows.

The large landscaped grounds, covering an acre and a half, are unsurpassed in the state. Beautiful terraced lawns, thousands of flowers, shrubs and trees; tennis court; garage; summer house; pergola and fences.

A beautiful home in every detail, well designed and substantially built. Located in a modern restricted home district.

Owner finds home too large and wants to build smaller home in same location. Price complete with furnishings, \$35,000. Will consider first class farm property as part payment.

Write to the OWNER at 1354 Stratford Avenue, Salt Lake City.

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Name and Address. Numbered if Desired. LEG BANDS for Poultry, Pigeons, Turkeys. SALT LAKE STAMP CO. Salt Lake, Utah.

WE DON'T ASK YOU TO MAKE FIRST PAYMENT FOR TWO YEARS!

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40 ACRES EACH.—RICH, DEEP SOIL, near Bellevue, Idaho, on "Wood River branch O. S. L." HONEST, INDUSTRIOUS MEN can get one of these ranches and begin life of independence. The land is rich sandy loam with plenty of water. Daily mail service. Splendid climate.

See us at once and be convinced that of all land offerings this is most tempting. Call OR WRITE.

For Sale 25 Acre Farm Near Salt Lake.

707 Kearns Bldg., Salt Lake City, Utah.

OPENED JAN. 1ST, 1913



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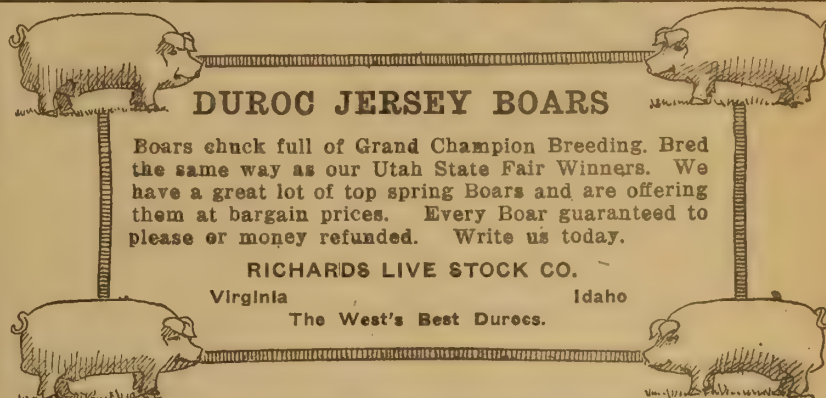
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IN CONNECTION



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Boars chuck full of Grand Champion Breeding. Bred the same way as our Utah State Fair Winners. We have a great lot of top spring Boars and are offering them at bargain prices. Every Boar guaranteed to please or money refunded. Write us today.

RICHARDS LIVE STOCK CO.

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The West's Best Durocs.

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We are now booking orders for Spring Delivery in White Leghorns, Brown Leghorns, R. I. Reds, Barred Rocks and Black Minorcas. Anconas also.

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One Black Standard Bred Stallion foaled 1907 by George Y. Wallace. Sired by Robert 1, out of Incas Mare. Inquire

C. G. BERRY

21 West South Temple

Salt Lake City Was. 387.

50 HEAD OF DUROCS

Sired by Utah Chief. For sale at market prices. Papers furnished. Address

I. L. PULLUM

749—28th St., Ogden, Utah.

FOR SALE—One 5-year old solid color, Silverine's Ex. Isis Lad. Grand-mother 18 and 20 pounds butter per week—\$75.00. One yearling, solid color, Gr. Sir Victorias Champ. Lad. From 18 pound producers—\$50.00. Will trade yearling for good young bull. Mound View Farm, Brigham, Utah, R. D. 2.

Using Sugar

When housewives use sugar that is made in the west, such as Table and Preserving Sugar, they are securing a product that is not only 100 per cent pure but which also contains 98 per cent of energy when consumed as food—a body builder, a strength builder and an energy builder.

YOU NEED THIS FOOD

When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

**HANDLING AND MARKET-
ING POTATOES**

(Continued from page 3)

tained for grade No. 1 in a number of early or "new" potato sections, and the commonly discussed minimum for this grade is from 1 1/8 to 2 inches. The minimum diameter for a long variety should probably be a little smaller than for a round one. Since it is practically impossible in grading any perishable products commercially to secure a perfect grade, reasonable tolerances should be allowed. The No. 2 grade should include the better of the remaining potatoes.

We carry a large stock of the Best Vegetable Parchment Butter Wrappers and Especially Prepared Ink for Printing the same. We furnish them Postage Prepaid at the following prices, money to accompany order:

100.....	\$.90
200.....	1.25
500.....	2.25
1000.....	3.00

Send all orders to

THE UTAH FARMER

LEHI, UTAH

THE HOUSE PLANT

SEASON IS HERE

Plants can be successfully grown if intelligently handled. There are four things essential to successful plant growth: light, air, soil, and water.

Sunlight is necessary to produce the chemical reactions which transform the elements found in soil into available plant food. This plant food is taken up by the plant into the leaves in the form of a green colored substance. When a plant has insufficient light the leaves will appear of a sickly yellowish green color and eventually the whole plant will become weak and spindly.

Air, not a draft of cold wind, but good fresh air and plenty of it, is necessary for plant growth. Plants are quite human in many ways. They must breathe and become refreshed like animals. Fortunately for us, plants also absorb the carbon dioxide gas, which is the waste material breathed out by human beings. In this way plants in the house are valuable, since they help to purify the air we breathe.

Soil—good soil, one that is composed of a rich sand loam—2 parts orchard black dirt; $\frac{3}{4}$ part sand; $\frac{1}{2}$ sifted, well-rotted stable manure or leaf mould.

The man or woman who knows how to use the watering pot will be successful with plants. Plants at certain times need to have the dust syringed off the leaves, mostly from the upper side, occasionally from the underside, as we wash our faces to remove dirt and perspiration. Some few plants, like begonias, will not endure much water on the foliage. These should be wiped off carefully with a sponge or damp cloth.

The application of water to the soil is the most important practice in flower culture, gently on top, so as not to overpack the soil, in ample quantity, when necessary, but not at all until it is necessary. The bottom of a flower pot should be covered with broken bits of crockery to insure good drainage. A cool temperature (60 degrees to 70 degrees F.) and watering heavily once a week is best. Plants like the morning sun and light, and the east window should be chosen for them if possible.

Blooming plants ought to be repotted each year; ferns and palms every three years, as a rule. The pot must not be too large for the plant if you wish it to bloom heavily. Crowding the roots slightly increases the top growth, flowers and foliage. This is called "forcing" a plant. It has a tendency to weaken the plant as a whole, and should not be permitted for any length of time. Keep the pot full of roots but not so full that they show at the top or push through the hole at the bottom. Yellow leaves mean too much water; brown leaves mean drouth.

A little vegetable cooking oil poured over the surface of the soil around plants in boxes or pots, or over soil before potting, will rid it of worms. Use a tablespoonful to an 8-inch pot. Float it over the entire surface with a little water. At night worms will be suffocated by the oil and come to the top. They may be gathered and destroyed. After two days stir up the top soil, mixing in the oil.

Do not "fuss" with and handle plants too much. Like human beings, they do not want to be "nagged" all the time. On the other hand, they must not be neglected.—H. F. Major.

THE COST OF WHEAT

Man who gets biggest yields not always the one who makes biggest profit. There are two prominent factors that influence the cost of a bushel of wheat. One of these is the actual cost per acre, and the other is the number of bushels produced per acre. The cost per acre divided by the number of bushels gives the cost per bushel. If it costs 5.00 per acre to grow a yield of ten bushels, then the cost is 50 cents per bushel. On the other hand, with a higher cost which may be incurred through high priced land, a greater amount and more expensive labor, etc., the yield must be correspondingly higher. Thus, with a cost per acre of \$15.00, the yield would have to be 30 bushels to make the cost the same as in the former case.

The man who increases his cost to \$15.00 per acre by adding more work

or otherwise, and as a result gets a yield of less than 30 bushels, must do one of two things. He must get more for his wheat, in order to make the same profit as his neighbor, or he must be satisfied with less profit than his neighbor.

There are the two ways of looking at this proposition. Oftentimes the

man who is getting the smaller yield is actually producing wheat cheaper than the man who puts forth a special effort to get a large yield. True, it must not be forgotten that yield is very important, but the goal should be the greatest yield with the smallest relative cost. O. S. Rayner, Colorado A. C.

IMPROVE YOUR GRADE HERD Use a Guernsey Bull

GUERNSEY DAIRY PRODUCTS are the most in demand in every market. They are noted for **HIGHEST NATURAL COLOR**, and **PLEASING FLAVOR**.

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THE AMERICAN GUERNSEY CATTLE CLUB
Box P U Peterboro, N. H.



Concrete Road Between Bountiful and St. Joseph, Davis County, Utah.

What Is a Concrete Road?

A concrete road is the kind of road you have often wished for. It is a road that is always good.

There is no dust nor mud. **IT IS CLEAN.**

There are no ruts nor holes to jolt your wagon, carriage or automobile. **IT IS COMFORTABLE.**

Its gritty surface prevents slipping and skidding. The gray color makes it stand out in the dark. **IT IS SAFE.**

The cost of construction is moderate and the maintenance almost nothing. **IT IS ECONOMICAL.**

Thirty miles of concrete roads in Utah are a fitting testimonial of their value. Thousands of miles in use in all sections of the United States make the evidence conclusive.

What others have done you can do. With a tax rate of only $1\frac{1}{2}$ mills to cover the cost of construction, Utah County can well afford to build a concrete road from end to end, a road that will last for years and which will still be there for your children's use.

Let us give you further details. A free copy of "Concrete Facts about Concrete Roads" will be mailed to you upon request. Read it. See for yourself how Utah County can profit by the experience of other communities. Tell your road officials about it.

PORTLAND CEMENT ASSOCIATION

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Utah Representative, W. F. Long, 907 Kearns Building, Salt Lake City.

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 21

LEHI AND SALT LAKE CITY, UTAH

DECEMBER 23, 1916

A Christmas Greeting

To all our subscribers

To all our advertisers

To all our patrons who praise or criticize

We offer a Christmas Greeting, warm with the spirit of human fellowship and full with wishes that the Yuletide may bring to all peace, health, contentment and prosperity

The First Christmas

St. Luke, Chapter II.

And it came to pass in those days that there went out a decree from Caesar Augustus that all the world should be taxed. And all went to be taxed, every one into his own city. And Joseph also went up from Galilee out of the city of Nazareth into Judea, unto the city of David, which is called Bethlehem, to be taxed with Mary, his espoused wife, being great with child.

And so it was that, while they were there, the days were accomplished that she should be delivered. And she brought forth her firstborn son, and wrapped him in swaddling clothes and laid him in a manger; because there was no room for them in the inn.

And there were in the same country shepherds abiding in the field, keeping

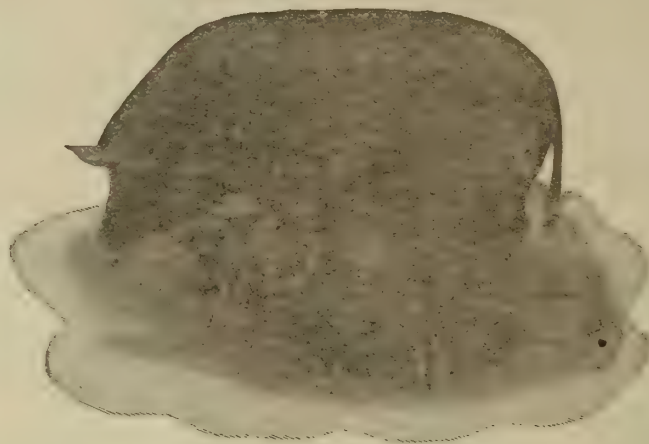
watch over their flock by night. And lo, the angel of the Lord came upon them, and the glory of the Lord shone round about them; and they were sore afraid. And the angel said unto them:

"Fear not! For, behold, I bring you good tidings of great joy, which shall be to all people. For unto you is born this day, in the city of David, a Saviour, which is Christ the Lord. And this shall be a sign unto you: Ye shall find the babe wrapped in swaddling clothes, lying in a manger."

And suddenly there was with the angel a multitude of the heavenly host, praising God and saying:

"Glory to God in the highest, and on earth peace, good will toward men!"

Produce More Livestock



More live-stock is the one thing that we need on our farms. When the movement was started by those interested in producing more live-stock, the Utah Farmer got right behind the proposition and helped to work out the plans.

We shall devote each week a part of our space to this undertaking.. Giving articles and information as to the best kind, how to care for and feed them, in fact will have some good live reading matter along this line each week.

Besides live-stock we will have

other departments, working always for general agriculture. Right now is the time to renew your subscription and help make the Utah Farmer what we have planned it should be.

We are more than ever determined that, as far as we are concerned, the results for 1917 shall far exceed anything we have done heretofore in producing a farm magazine of the very highest quality. Make sure you are one of the readers for 1917. The farming business for next year does look good. Make the most of it.



Right now is the time to join the family of readers of

The Utah Farmer

If you are already a member, now is the time to renew. Send your remittance to Lehi, Utah.

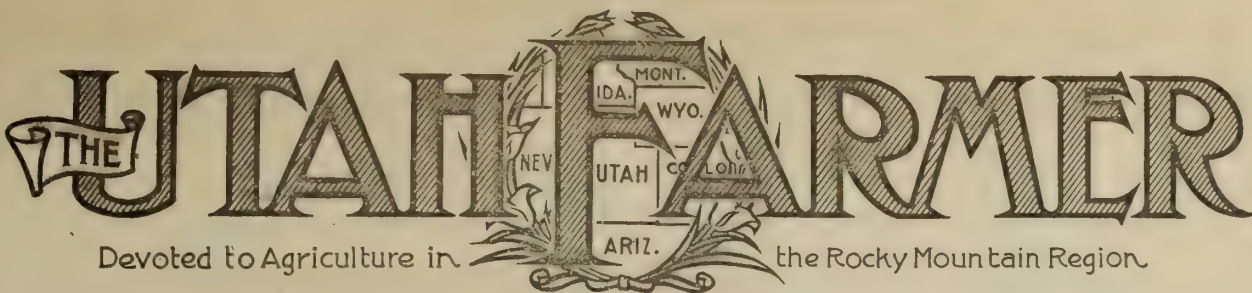
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A YEAR.

FOREIGN

SUBSCRIPTION

\$1.50.

VOLUME XIII.

LEHI, UTAH, SATURDAY, DECEMBER 23, 1916

No. 21

Boys and Girls Will Help Produce More Live-Stock

Next year, 1917, the boys and girls of this State will help in a big movement to produce more live-stock. Arrangements have been made so that every boy or girl can have a pig to raise. The work will be done in any school district where an agricultural teacher is employed for the summer months. This teacher will be required to visit each boy or girl weekly, making a report to the State Leader, but what is more important he will work with these boys and girls, helping to direct them in the care and feeding. In keeping records of work done, the amount of cost for producing the pigs. Each boy or girl must open a bank account thus teaching them how to care for money.

This work will serve several purposes—the bettering and increasing of the live-stock industry, the training of the boys and girls in that line of work and the teaching of economy and industry.

Each boy or girl is to be provided with a high grade sow that will farrow in the early spring. A note will be taken from the boy for the value of the sow and he must pay that amount at the end of the season. The amount may be paid when sale is made or note can be paid from other funds and boy retain possession; he may want to go into the hog business. The money accruing as profits belongs to the boy or girl.

The educational and follow up work will be under the direction of the Agricultural College with Prof. J. C. Hogenson as State leader and E. W. Stephens as his assistant. The details being carried out by the agricultural leaders in each school district.

This movement is made possible because of the financial aid given by Ogden Packing and Provision Company and the Union Stock Yards of Ogden, who will place the pigs in certain sections of the state, and the Salt Lake Union Stock Yards, Ogden Packing Company and other Salt Lake interests who will work in other sections.

District prizes will be given by these companies and prizes for the individual boy or girl in each district who makes the highest score.

Arrangement have already been made for a fat hog show next fall at the Ogden stock yards where a number of prizes will be given.

It is planned when the hogs are distributed in any community to have a celebration, a meeting to boost the live-stock industry and then the boys and girls are to receive their pigs.

A fat live-stock show will be held at Salt Lake this spring some time. The Utah Farmer through its manager James M. Kirkham has taken an active part in promoting this work

which means so much to the State.

To give some idea as to what the boys and girls have been doing during the year just closing there were 3790 boys and girls enrolled in the various projects; 2501 members completed their work. The total money value of all products raised, made, or produced by the boys and girls engaged in the club work was \$109,607.47. The total cost of production was \$31,356.46. The cost of supervision was \$9,003.00. The total profit to the state, after all expenses were paid, was \$69,248.00.

The money side is, after all, of the least importance. The business experience which they get, the learning how to do their work better, the learning more about the common duties of life, the enlarged viewpoint which

they get of life; all of these are of far more importance to the boys and girls than the amount of money they get for their labors, because it helps them to develop those qualities which go toward the making of broad minded citizens and helps them to lay a solid foundation for success in life.

WHAT BOYS' AND GIRLS' CLUBS DO J. C. Hogenson.

A revolution is on in Utah agriculture. It is a peaceful one but none the less effective and complete. Ten years will be required for its accomplishment, but it will be a sowing well spent, with a harvest that is abundant. The sign of it cropped out at nearly all the county fairs this fall—that is, at all the fairs worth while. This is the

sign: "Boys' and Girls' Club Exhibits."

Bear this in mind: There will be no blowing of horns about this or that boy or girl who has accomplished the well-nigh impossible in crop yields upon an acre of ground or a garden plot. Results are summed up on a different plan. Of course the boys and girls are encouraged to do their best. The stimulus of competition is necessary to keep them "on their toes." But that is not the aim and object, nor is it essential in carrying out a season's work that a particularly high yield be obtained with a given crop. The work is the thing; the learning how to farm right, not the quantity produced.

The State offers no particular large prizes. Prizes are offered by fair associations in some instances, but the season's awards are made on a broader basis than mere bulk. While showing at the fair is a part of the season's work, many a boy and girl holding club membership cannot reach a fair to make an exhibit. That is not a disability that hinders in grading the work. The fair or the camp where the boys and girls assemble to celebrate the harvest season, which marks the end of their crop work, is merely the finishing touch. They are graded on the basis of effort put into their crop, plus intelligence shown in telling the story of how they did the work, which establishes whether or not they have grasped the theory. If farmers were graded on this basis by the public, we would have more successful ones and they would not be judged so much by their deposits at the country bank, or their big grain yields, but by their rating in the Bank of Contentment.

Underlying the club work is this big idea—to make happy farm homes. With this ideal in mind the work cannot fail; it is a success as soon as it is started.

No bigger idea was ever born than that of getting the farm boys and girls together in club organizations and thus teaching them the principles of life—all of life, not farm life alone.

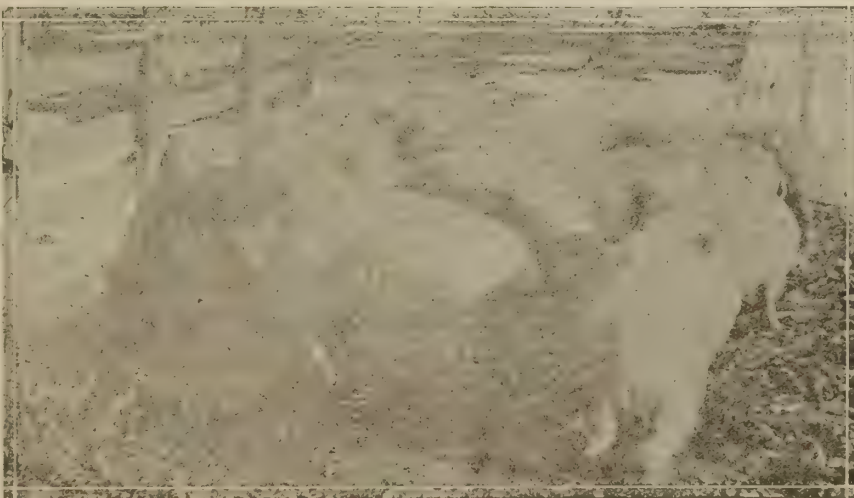
Forecast of the Future.

This big idea has taken hold along with the county agriculturist and the home demonstrator. We have our missionaries getting the boys and girls of the school districts together, teaching them how to grow things in the field and garden, but especially how to grow ideas and to develop their thinking powers. When these boys and girls reach manhood and womanhood they will tell the county agent what to do instead of having advice come from the agent. And there will be more use for him than there is today, for the farmers will be organized into shipping associations,

(Continued on page 14)



Yes, the girls can take part. Many successful farms are managed by the women.



Boys how would you like to have a lot of pigs like these to market next September.

Dairying

A TEST YEAR FOR

THE DAIRY COW

"Are We Boarding the Cows, or are the Cows Boarding Us?"

Experiments in various stations prove that a dairy cow will return from \$14 to \$24 in dairy products for each ton of alfalfa hay consumed. Many dairymen of the North Middle states claim a profit on Idaho hay delivered on their farms at \$20.00 per ton.

The present year may be called a test year for the dairy cow. Should we not expect our dairy cows which are fed exclusively on alfalfa to return to us \$18.00 in dairy products for each ton consumed. Surely this is the condition we expect to reach in the near future. This winter we could just break even on the foregoing basis, throwing in our labor for the privilege of the association with faithful bovine. On \$12 hay which is very likely our future price, we should be making just a fair profit. But someone has suggested "we have to keep the cows through the winter in order to have them in the summer when feed is cheap." This may sound alright if such conditions were necessary. It savors too much of conditions of the present winter. Most of us expect a little more than a break even proposition with the dairy cow.

Let us make this problem concrete by referring again to the \$18.00 in dairy products we should expect from

each ton of alfalfa hay consumed by a dairy cow. At 5c per quart for milk this would mean 360 quarts or 765 lbs. If 40 lbs. of this hay were consumed each day the ton would be fed away in 50 days. An average milk production in order to get the required amount would be 153 lbs. per day (approximately 8 quarts). Our next proposition, and the one generally followed would be to sell separated cream. According to the Cache valley condensory records where thousands of cows are frequently tested for butter fat, the summer tests give an average of 3.5 per cent and the winter tests 4 per cent. Taking the winter test for our cow assuming butter fat worth 30c per pound, she must produce 60 lbs. of butter from 1500 lbs. of milk (average of 30 quarts of milk per day) from the ton of hay. If we credit our cow with 25c for each one hundred pounds of separated milk and make a liberal allowance for manure the above figures can be shoved down a little.

This seems a severe requirement to exact from "Old Brock" who has almost to be put on the pension list. But facts and figures cannot be disputed. It is evident she must come up to this requirement at least during the best part of her lactation period if she is to pay a fair price for the feed and labor expended in her behalf.

I think I am safe in saying, that from one third to one half of the animals that are now standing twice daily as dairy cows would find their proper place—the butcher's block, if a cow-testing association were started and accurate records feed and production kept.

What is the remedy for such a situation—pure-bred cows. No, they are too expensive for the average farmer and must come later. Pure-bred bulls \$75.00 to \$150.00 each, 3 month of age) have solved the problem for many communities. It is declared that pure-bred sires have increased the value of the offspring in the first generation from 30 to 60 per cent, or probably an average of 40 per cent.

About eight years ago the first co-operative bull association was organized in the United States on lines similar to those of Denmark which have been in existence for many years. The first state to take up this form of co-operation was Michigan. Several states now have these associations. Reports of their work show that the members are getting the services of high-class pure-bred bulls at an average cost considerably less than they formally paid for the services of scrub bulls. Usually from three to five bulls are owned by each association, and the members are divided into as many sections, each of which includes from 50 to 60 cows. Every two years each bull is changed to another section. The costs of bulls and maintenance are divided among the members in proportion to number of cows.

One of the strong points in this system is the preservation of bulls in service to an age when their daughters are producing. Those bulls that sire extra good heifers can be kept for a number of years and used in unrelated herds. It avoids the common farm practice of disposing of a bull by the time he is three or four years old and before his value as a sire has been fully demonstrated. Community adoption of one or two breeds is an aid to this system.

State laws are forcing us to turn only pure-bred sires on the range the coming years. Let us not wait for the law to force pure-bred sires into our dairy herds.—Lee R. Taylor.

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everywhere

---A Merry Christmas
---A Happy New Year

COST OF KEEPING COW FOR MILK PRODUCTION.

Here is an interesting detailed estimate made by the State University of Ohio of the probable cost of keeping a cow for city milk production during the coming year, this estimate being based upon figures secured from observation of thousands of herds:

Cost of feed.....	\$61.00
Cost of labor.....	26.00
Interest on value of cow.....	4.75
Cost of keeping bull.....	2.50
Interest on value of barn and equipment.....	4.00
Cost of bedding.....	2.90
Taxes and insurance on cow, stable, and equipment.....	1.12
Depreciation in value of herd, including loss by disease.....	4.20
Veterinary service and medicine.....	.46
Depreciation in value of barn and equipment.....	4.25
General improvement, including painting and disinfecting.....	1.75

Cooling or separating milk \$6.20
Hauling milk from stable to station..... 6.00

12.20
\$125.13

10 tons manure at \$2.75 less
\$2.10 (cost of hauling) \$25.40
Galf..... 3.00
?..... 28.40

Total net cost for the year.....\$96.73



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The School and Farm of the Future

Part of an address given by Beverly T. Galloway.

"Wherever is found a permanent and successful agriculture, measured merely by the maintenance of soil fertility and high average crop yields, there is found to be a peasantized and labor-depressed people, whose days are full of toil, and whose minds have never been given much opportunity for growth.

"Even in this country, more than a million farmers live and support their families on a labor income of less than a hundred dollars a year, and very little of this income actually comes to the farmer as money. So, despite all that has been said regarding the delights, the independence, the freedom, and the self-sufficiency of the farm, people are turning from it.

"While there has been a steady decrease in the percentage of our population engaged in agriculture, the per capita production of our staple crops has been increasing. This is primarily due to the utilization of machinery, making it practicable to more and more utilize horse power and other power instead of man power.

"Despite the fact that in practically all other countries the intensity of the farming has increased with the density of population, this need not follow here. It would be unfortunate if it did follow, because an intensive agriculture has been practicable only where there is an over-supply of human labor. The bountiful crops from small areas have been made possible only by the toil and sweat of the man who, while he is able to produce these results, must do so at the expense of the mental, and I might almost say moral, side of his being. This is agricultural peasantry in its worst form, and, while much may be said on the subject of making two blades of grass grow where only one grew before, we do not want to accomplish this object by sacrificing the very things that make life worth living.

"The farm of the future will so utilize modern labor-saving devices and efficiency methods that human labor will be reduced to a minimum, and he farmer and his children will have time, opportunity and means of living satisfactory, wholesome life. It will probably mean a farm of average size.

"We may look forward to a permanent husbandry, freed from the blight of peasantry, standing squarely for its place in the affairs of the nation, but recognizing its relations and responsibilities to other industries, and recognizing further that the fullest and best development of one can be attained only through the fullest and best development of all.

"The demand is for education that will teach the meaning of things and their relation to the present, rather than the teaching of words and their relation to the past. I am not so much concerned with making more farmers as I am with making better ones.

"The school must concern itself more and more with the needs of the people, and be more of a community center, with the teacher as a community builder.

"The mere introduction of 'agriculture' into the school will not accomplish the ends desired; and it must be fully realized that the school is not for

the preparation of life, but is life itself.

"If it is vital that the people of the open country learn to work together in matters affecting their economic and social welfare, it is even more vital that those who are directing the forces in the field of education and re-direction of rural affairs should also strive to bring about unity of purpose.

"Probably one of the greatest and most potential forces for bringing about and welding together the agencies that are to advance agriculture is to be found in the recent federal law known as the Smith-Lever extension act. This measure, for the first time, develops as a dominant factor the idea of co-operative effort. The principle that the federal government will help those states whose people are ready to help themselves in a financial way, is unique in federal legislation.

"The great recent progress made in city life is not a full measure of our civilization; for our civilization rests at bottom on the wholesomeness, the attractiveness, and the completeness, as well as the prosperity, of life in the country. The men and women on the farms stand for what is fundamentally best and most needed in our American life. Upon the development of country life rests ultimately our ability, by methods of farming requiring the highest intelligence, to continue to feed and clothe the hungry nations; to supply the city with fresh blood, clean bodies, and clear brains, that can endure the terrific strain of modern life; we need the development of men in the open country, who will be in the future, as in the past, the stay and the strength of the nation in time of war, and its guiding and controlling spirit in time of peace."

PROFITS INCREASED

ON THE FARM

The harvest is over. Every machine and implement which is not in use should be under cover. The fall rains plant the seed of rust, which are harvested by the manufacturers of farm machinery.

The average life of farm machinery in this country is short, entirely too short, and for years has caused an enormous annual loss to the farmers, and large profits for the manufacturer. The best machinery will wear out in time, but the life of any implement depends primarily upon the care it has received and the facility and ability of the farmer to do repair work.

The implements used on the farm represent a large investment, and this investment increases yearly. Every year that can be added to their life represents profit. This is the age of the "iron horse," and unless we take care of our machinery the annual loss is going to increase enormously.

Every farmer should study his machine and see where he can increase its efficiency. Oil is cheaper than repairs and new tools, and when properly used will reduce the friction and increase the life of the machine.

If the binder has not already been housed, it should be done, as soon as possible. During a trip across the state last winter, the writer counted seven binders out in the field within a radius of fifty miles, and some of

them were new machines. Under such treatment a binder will not last more than three years. Then the total yearly loss on these machines, whose cost was about \$900, would amount to \$300. This is more than the yearly profit on some farms. With proper care the same machines could have been made to last ten or fifteen years.

"A high polish on the moldboard is of far more value than that acquired in high society." When you are through with your plow this fall cover the moldboard with any heavy grease that will keep the air away from it and put it away. This will keep the plow from rusting and can be easily removed. The same treatment to the disc harrow and cultivator shovels will protect them.

The farm machinery is only useful for a short period, but must work continuously when being used. Hence it must be in good running order and properly adjusted.

When buying a new machine keep in mind these four words: Simplicity, Reliability, Durability and Accessibility. Then if the machine is given proper care, long life and greater profits are insured. Use plenty of oil and grease.—M. A. R. Kelley.

SPREAD YOUR MANURE

In hauling out manure in the winter and spring it is better to leave it in small piles in the field or scatter it on the land at once.

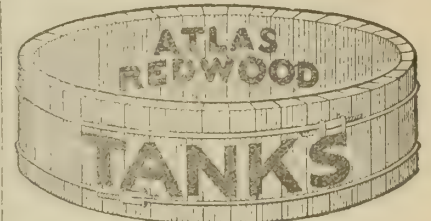
L. H. Jones.

Answered by F. S. Harris.

It is better to spread manure over the land as soon as it is hauled out,

losses usually occur in manure through leaching and fermentation. If the manure is spread over the land all the plant food that is washed from the manure goes into the land—evenly; if it is in piles this plant food is carried into the spots where the piles stood and will make the field uneven.

Destructive fermentation goes on most readily when the manure heap is loose and fairly dry, which is just the condition found in these small piles that are left in the field. If manure must be piled it should be made into fairly large piles which are kept compact and moist.



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If your hens are not laying, the chances are you are not feeding properly.

To value of a good pure-bred sire can not be over estimated. It pays and pays big to use the very best.

A milk check coming regularly is a help to every home. To get the best returns from your cows they ought to have good feed, good care and good treatment.

A spirit of friendliness toward all your live-stock will make you a better man within and also increase the milk yield, fatten the steer, gentle the horse, subdue the calf and encourage the colt.

Now is a season when much work can be done about the barn and "around home." Some good paint would brighten up the buildings about the place—improve the appearance and help to preserve the property.

CHRISTMAS EXTRAVAGANCE

Christmas of 1916 finds the world in a very unusual condition. Thousands of people are made to mourn because of the awful conflict now going on in Europe. Hundreds of people in this country have become wealthy and their extravagance is expressed in the Christmas shopping now going on.

In New York you can buy a box of candy for

\$250.00, pair of silk stockings \$225.00, a fur coat for \$30,000.00 to \$60,000.00 and other presents at fabulous sums up to half a million for a pearl necklace.

WHAT A DOLLAR WILL BUY.

We want to emphasize the importance of your renewal to the Utah Farmer. One dollar pays for a year's subscription of fifty-two numbers—close to nine hundred pages—of reading matter, which comes to you weekly with helpful ideas and suggestions. Many improvements are planned for the Farmer this coming year. We shall try and make the Utah Farmer just a little better than ever.

Right now is the time to renew your subscription. You have no doubt received a letter from our office asking you for a renewal, and telling you the amount you are owing us. Start the new year right by sending in your check today for 1916, and get the biggest dollar's worth of information and helpful suggestions about your farm that you could buy.

SIGN YOUR LETTERS.

In our mail today we received a letter from one of our subscribers asking us to stop his paper, the letter was not signed so we do not know what to do about it. We do not have the least idea who sent it.

No doubt he will say we are trying to force our paper on him because we have not stopped it. Such would be unfair to us because we do want to comply with the wishes of our subscribers. The cost of producing a paper is too high today to send them out unless they are read and used. Each day we receive many letters and if it is only one out of a hundred who fail to sign his name when sending in renewal, asking questions, or asking for change of address, you can see what it means to us. So we again remind you to always sign your name and give correct address.

DAIRY COWS AND HIGH FEED.

"The high price of hay and grain may be the means of weeding out all the poor cows," such was the remarks of a man who had been studying local conditions. Will the owner of dairy cows sell the poor producers or will they loose their heads and sell all of them?

In some sections of the state feed is very scarce and the man who has live-stock with little or no feed faces a serious problem. It would be very unwise to sell all of the cows because the present condition will be adjusted. Dairy products must bring a better price to the man who produces it if feeds remain long at present prices.

Alfalfa hay at \$20.00 per ton can be profitably fed to dairy cows of the better kind. They are doing it in other places, but the cows are good producers. The farmer knows how much milk he is getting and can tell whether his feeding is profitable or not.

Weed out the poor, keep the good cows, for the dairy business will come back strong and then you will be glad that you kept them.

RAISE A PIG.

Arrangements have been made so that every boy or girl can raise a pig. We want to compliment the Packing Companies and others who have made possible the way so that any boy or girl, through the district leader, can have a pig to raise the coming summer.

We want to encourage those who have in charge

the boys' and girls' club work of the State. They have an opportunity to do a great deal of good. It will be a practical lesson of the best kind. They have in their power to give these boys and girls the very best methods of care and feeding. Teaching them how to keep records. How to make money feeding hogs.

The work means much to the hog business of the State for if the boys can make money the father will want to try it out only on a larger scale.

We would like to see just as many boys and girls in this work as possible, better, however, not to have too many and make a complete success of it, than to do it on too big a scale and some fail because they did not get the right kind of help.

CHRISTMAS GREETINGS.

To all of our readers we extend the Christmas Greetings. May the same spirit of love and kindness be in your homes as was expressed in the life and words of Jesus. May the song you sing be like unto the one the angels sang to the shepherds, "Peace on earth, good will toward men."

If you want to really enjoy Christmas, try to make others happy, for real joy can only come when you make a sacrifice in order that some one else may receive.

Christmas is the day of all days dedicated to childhood. We celebrate in honor of His birth. Jesus loved little children, delighted in their play, took them in His arms and blessed them, and told us we must become like unto them. The aged enjoy Christmas only as they keep young in spirit. Gladden the hearts of the children as best you can. Let it be a day of fun-making and love-making.

The person who gets the most pleasure out of the Christmas season is the giver—not the giver of money or expensive presents—but rather the giver of kind words, of loving thoughts and cheerful smiles.

A BOAST FOR TORREN SYSTEM.

There are a number of people in this state who are in favor of the Torren system of titles. They will be pleased to learn that the Federal Farm Loan Board has written an answer to a question that "Torrens Certificates will be accepted as basis of title * * * * and that there will be no charge for such examination made against the borrower."

We wish that this could be said about the present system of titles in our state, "no charge will be made against the borrower." One lawyer in Salt Lake told me recently that he examined from one to a dozen titles every day. You know what he got out of it, if you have ever had one examined. He was frank enough to say, that each one would average close to ten dollars.

The reason he had so many was because he specialized along this line of work.

Add to this what the abstractor gets out of it and no wonder the people complain about the high cost of transferring titles.

Of course the lawyers and abstractors and those who are getting rich out of the present system will fight any proposed change to the Torren System. The question of titles will be an important one when the government farm loan banks start doing business. Why not adopt the Torrens Act and cut out this expense? The endorsement given by the farm loan board is a big boast for the Torren System.

IRRIGATORS' QUERIES ANSWERED

O. W. Israelsen, Utah Agricultural College.

There seem to be so many terms used in water measurement that they are somewhat confusing. Will you please outline the terms most commonly used, and those which you consider most satisfactory?

The terms used in water measurement, spoken of ordinarily as Units of Measurement, may be divided into two general classes. These classes are, first, those terms which include volume of water at rest; and second, those terms which include volume of water running, that is, passing a given point in a given period of time.

In the first group may be included:

- (1) Gallon (3) Acre-Inch
- (2) Cubic Foot (4) Acre-Foot

The first two units above given probably need no definition. An acre-inch is defined as that quantity of water necessary to cover one acre to a depth of one inch; and an acre-foot is defined as that quantity of water necessary to cover one acre to a depth of one foot. It is equivalent to 43,560 cubic feet, since there are that number of square feet in one acre.

The more important units in the second group are:

- (1) Miners Inch.
- (2) Cubic foot per Second.
- (3) Acre-Inches per Hour.
- (4) Gallons per Minute.

A miners inch is defined as that quantity of water which will run through an opening one square inch in area under a given head, or pressure. This pressure varies in the different states. In Utah it is 4 inches, and one miners inch—1-50 of a cubic foot per second.

A cubic foot per second is simply, as the name implies, one cubic foot of water delivered in each second of time. For example; if through a box one foot wide and one foot deep, water were running at the rate of one foot per second of time, the discharge would be one cubic foot per second. It may easily be found by the use of arithmetic that one cubic foot of water per second running one hour will cover one acre to the depth of approximately one inch; consequently, we may say that one cubic foot

per second is equivalent to one acre-inch per hour, a unit which is frequently of very great service to the irrigator.

Likewise, it may be shown that one cubic foot of water per second running for one minute, is equivalent to 450 gallons, approximately; therefore, a relation frequently used is that one cubic foot per second equals 450 gallons per minute.

These relationships are only approximate, that is, accurate within one percent.

THE PROBLEM OF THE FARM

Every farm is a problem in itself. Every farmer is a problem solver in proportion as he is an earnest student of his own farm. The difficulty does not lie so much in the farm as it does to get the right kind of a man, a man endowed with the true student spirit, at the head of it. One of the most serious causes for the decline of fertility and the run-down character of farms, everywhere, is the fact that the owners have practically abandoned them, gone into town to live, leaving them to tenants to manage.

No other business has this setback feature at work eating out the very vitality of its existence. A big percent of these retired farmers should never have left the farm. If they felt like giving up some of the hard work they should still stay on the farm and look after it, see that justice is done it. The claim is made that it is impossible to get help. But the truth we suspect is, that the farmer himself, and his wife and daughters, and sons maybe, want to get away from the farm and live in town. The decline of the farm is a big problem, but the decline of the farm spirit, farm ambition, farm pride, and farm love is a bigger problem.

If this is to be the treatment the old farm is going to get, deserted by those who of all others owe it protection, management, and preservation, then a different system of tenantry must prevail.

As far as we can learn not one lease in a hundred makes any adequate provision for a right system of tillage in plowing and cultivating, in the purchase of fertilizers in the rotation of crops. The owner will not give up any of his revenue for that purpose, and the tenant certainly will not. This situation lacks brains, lacks the merit even of a wise selfishness on the part of either of the contracting parties. The owner has taken upon himself the burden of increased cost of living; the tenant is given no encouragement to spend time or money for the benefit of the farm and so down the road to ruin goes the farm, the victim of the selfish stupidity of two men, whereas formerly it had but one to contend with.

As we view this problem of absenteeism on one hand and destructive management on the other, there are only two ways out of the difficulty; either sell the farm or lease it on longer time, with sufficient concessions to the tenant so he can have fair encouragement so to manage it as to conserve and increase its fertility. If he is given a five or ten year lease, it is to his interest to keep up the farm. If his lease is for only one or two years it is for his interest to rob it all he can. Just as long as the present brainless system of farm management continues, as between owner and tenant, there is no escape from a widespread destruction to the farm.—Hoard's Dairyman.

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ORCHARD AND GARDEN

REINVIGORATING THE OLD ORCHARD W. S. Brown, O. A. C.

Not long ago the writer spent a day with a company of growers in going about among the prune and apple orchards of a little valley that has been raising considerable fruit for some time. Last year he spent three days tramping about the orchards of this district, noting the troubles of the growers and giving them such advice as, in his judgment, seemed best to fit the needs of the community.

One of the most serious conditions seen last year was the lack of vigor in many of the older orchards, prunes especially, as indicated by the light colored foliage and lifeless-looking bark of many of the trees. Leaves were often wilted, showing a lack of moisture, also. The crop of prunes on the sick trees was noticeably smaller on an average than the crop on trees still vigorous, and the size of the fruit was smaller.

One orchard in particular was neglected by its owner last year because it had little fruit. The result was that by mid-summer the trees were yellowing badly and the leaves were rolling up with drouth.

This grower was advised to drill in a cover crop of oats and vetch during the latter part of August and to plow this cover crop under as soon as his growth was in good shape for plowing in the spring and to follow with good cultivation. This advice was followed with the result that the trees are fresh and vigorous in appearance this year and are carrying one of the best crops in this valley.

While it is unwarranted to say that the cover crop and good cultivation were alone responsible for this quick recovery—because the owner had taken good care of his place up to last year—still a large part of the benefit was due to the treatment it received the past season.

This orchard and this valley are fairly typical of many old orchards in different sections of the state. These old orchards are fast getting to the point where they are unprofitable. They need re-invigorating, more food, more drink, better pruning.

The question is often asked, "What fertilizers shall I buy for my orchard? It is running down." While chemical fertilizers may be needed in some cases, a large majority of the orchards may be rejuvenated in a cheaper and simpler way, by the use of cover crops.

What is a cover crop? It is a crop sown late in summer, allowed to grow through fall and winter and plowed under in the spring.

What will a cover crop do? It will add fiber or "humus" to the soil and loosen up the soils which have become compact and lumpy because the fiber has been "burned" or oxidized out of them by cultivation or because the soil has suffered from wet plowing or other poor handling. By breaking the soil up into smaller particles, the cover crop adds to the amount of film moisture around the soil particles available for plant growth and also increases the feeding surface for the roots of plants. The roots of plants must have air or, in other words, they must not have the soil puddled or packed about them so closely that a quantity of oxygen sufficient for growing purposes cannot get to the

roots. Cover crops make the soil more porous and admit more air.

Some plants like rape, mustard, cowhorn turnips, and the like feed heavily on potash and, upon decaying, leave a large amount of this plant food ready for the roots of the trees. Another family of plants, called the pea family, make excellent cover crop plants because there are usually present on their roots bacteria that have the power of fixing the free nitrogen found in the air into nodules or swellings on the roots. When these nodules decay the nitrogen becomes available for other plants. Nitrogen is the chemical which, taken in by the plant through the roots, causes the dark green of the foliage and re-invigorates the tree. It is the most expensive element we have to buy in commercial fertilizers, hence it is much better to add it to the soil in this inexpensive way. Some of the nitrogen gatherers or legumes, as they are called, that are grown most commonly for cover crops are spring and hairy vetch, crimson clover, soy beans, cow peas, etc.

The cover crops for run down orchards in western and southern Oregon should consist of some one of the legumes planted with a strong upright-growing plant like rye, or oats to keep the legume from lodging. Some of the most popular combinations for the regions named are either oats and spring vetch. (*Vicia sativa*) at the rate of 20 to 30 lbs. of oats to 40 lbs. of vetch or rye and spring vetch, using 10 to 20 lbs. of rye with 40 lbs. of vetch.

In eastern Oregon, where, in many places, winters are colder than in the western part of the state, the hairy vetch, (*Vicia villasa*) will make more growth than the spring vetch and not kill out so quickly. Twenty pounds of hairy vetch if carefully drilled in will make a good stand.

Two things must be observed carefully if the crop is to be successful. It should be drilled in later in summer or early in the autumn so as to get a good start before cold weather sets in. This practice insures a good stand to plow under in the spring. In the second place, the plowing should not be put off until the cover crop has become tough and woody. When in this condition the fiber of the cover crop does not decay readily, consequently may cause a drying out of the soil, doing more harm than good.

THOUSANDS OF DOLLARS LOST THROUGH RUSTING MACHINERY

All farm implements should now be under shelter and be put in first-class condition for next season. The binder should be repaired now and not when you are ready to begin work. Delay at harvest time may mean the loss of many dollars. The same principle holds true for all other farm machines.

Too many farmers are careless with the equipment which makes farming a paying business. In every section of the State farm machinery can be seen out in the weather for weeks and months at a time. Such practices eat up the profits of the farm. What would the farmer think of the manufacturer who neglected his machinery? The manufacturer would be a mighty poor business man, yet the farmer, who is the greatest producer, allows his machines to rust and go without care.

Every farmer should have a place to store his machinery. A small building



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LOGAN, UTAH.

of simple construction, located between the house and barn, is best. A long shed not more than 18 feet wide, provided with continuous doors along one side, is more convenient for removing implements than a wider building. A small shop included at one end is a great convenience in keeping implements in repair.

When your implements are brought in from the field inspect them very carefully and note all repairs needed on a tag and tie it on the implement. Carefully clean and oil all bearings and looks over wooden parts. If the paint is becoming worn, put on a new coat to prevent the wood from shrinking or swelling. Place the machine under shelter and remove the tag when all repairs have been made in first-class condition. Proper maintenance and protection of farm machinery would mean millions of dollars in the pockets of the farmers each year.—E. W. Lehmann.

DO IT NOW.
I. D. O'Donnell.

One city man asked his neighbor if he was doing any gardening this year, and the reply was, "Oh yes; I am training my neighbor's bean vines to grow on my side of the fence." Here is where the city man has it over the farmer, for neighbors are not so convenient in the country. Therefore it behooves every farmer to plant his own bean vines, and while he is at it he might just as well do a good job and put in a real garden. Do something handsome; raise a garden you

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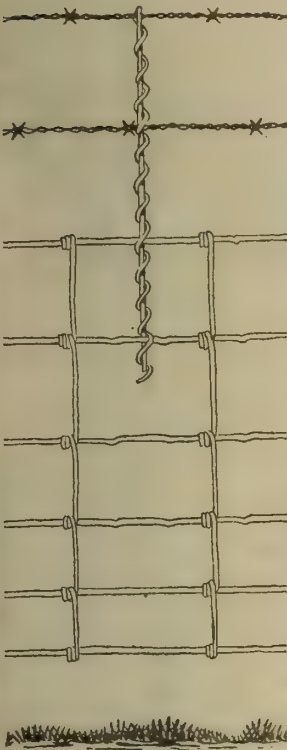
can brag about; then your wife won't have to worry about something to cook, and you won't have to worry about bills for canned stuff bought at the store. Good, fresh vegetables save many a doctor's bill, too. Sure, there is some work connected with it, but it is worth while, and the birds will help you take care of the bugs

The Steel Age

For fences real,
Cut out wood, and
PUT IN STEEL.

Steel fence Stays
Steel fence Posts
Steel for Gates and Hinges
and
Steel wire if you wish

THE UNIVERSAL FENCE STAY



MAKES GOOD FENCES BETTER

and worms that become interested in your garden.

It has been pertinently stated that the greatest obstacle between the producer and the consumer is the mud hole in the road. Think this over, and then go out and look your road over. If it needs fixing, get together with your neighbors and doctor it up. Your neighborhood is judged by the condition of your roads; make a good name for your neighborhood.

While everybody is talking preparedness, do a little work along this line yourself. Start right now and size up everything on the farm, starting in the house and winding up in the farthest corner of the farm. See that everything is shipshape and ready for a hard campaign. Don't get tied up in the rush season because of lack of preparedness. Have everything ready and the battle is half won.

Don't forget the fuel for the kitchen; get enough ready to last all summer. Maybe you can afford an oil stove and a self-cooker; they will help out and be appreciated you may be sure.

COOPERATION IN STUMP

REMOVING

Pullers and Dynamite Used in Combination.

Stump pullers are on the market operated by hand power, horse power, gasoline engines, etc. On clearing jobs large enough to warrant an investment in a puller, dynamite and the machine work nicely together. All men have their individual tastes and preferences. Some swear by explosives and will have nothing to do with stump pullers. Others pin their faith on the puller and will use no explosives. A third class takes the middle ground, and uses both in conjunction. They claim a saving in time and money is effected by the combination. There is merit in their contentions too. They argue that a puller does not break up a large stump so that it can be conveniently disposed of, also that a stump pulled out has immense quantities of dirt clinging to the roots and leaves a large hole in the ground to be filled.

Did you ever clear a mass of clay off the roots of a stump? No? Then there's one hard, disagreeable job you have missed. By using some dynamite, the stump is loosened, the anchor roots are broken, and much of the dirt is shaken off and is left in the hole after the stump is pulled. If the charges are properly loaded, the stump will also be well split up so that it will be easily handled after it is pulled. It doesn't require as much powder to loosen up and split a stump in this way as it would take to blast it out cleanly.

Therefore, it will be seen that the advantages of using a puller and powder in conjunction are these:

1. A saving in powder.
2. A saving in time.
3. A saving in labor.
4. Less strain on machinery, horses, harness, etc.
5. Greater ease in handling the stump after it is out.
6. Does away with the disagreeable and time-consuming work of clearing dirt off the roots.
7. Does away with a large part of the work of filling the hole.

Of course, where time is an important object, or in cases where it is inconvenient to employ a crew of men large enough to operate a stump puller, or when the amount of clearing to be

Emerson Farm Tractor

MODEL L.



The Emerson Model L 12-20 H. P.

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Will pull the implements you now have on the farm, such as gang plows, harrows, mowers, binders, manure spreaders, wagons, drags and small road graders.

A neat, compact Tractor with all working parts perfectly lubricated, thoroughly protected from dust, and easily accessible.

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done doesn't warrant the purchase of a puller, larger charges of explosives can be economically employed to blast the stumps clearly.

Stump wood, when broken up into fragments of the right size, makes mighty fine fire wood, especially for open fire places. Isn't it cheerful, though, sitting in the living room on a cold winter's night before a roaring, old-fashioned open grate fire?

ROTATION: SEVEN

REASONS WHY

1. Because it helps to maintain soil fertility.
2. Because it tends to improve the physical condition of the soil.
3. Because it assists the farmer to defeat weeds, insects, and plant diseases.
4. Because it furnishes a variety of feeds.
5. Because it distributes the farm work throughout the year.
6. Because it leads to live-stock farming—one of the settler's best assurances.
7. Because it provides a safeguard against ruinous crop failures.

HOW MANY BANKERS

LIKE THIS

Here is a tip to our bankers The following advertisement was run by a banker, it is so unique and sensible that we reproduce it and ask others to follow the lead set by this progressive banker:

- "Build a good silo.
- "Build a good dipping vat.
- "Breed high-grade cattle.
- "Dip the cattle.
- "Fill the silo.

"Then fill the cattle.

"Deposit the proceeds of sale of cattle with our bank and we will help you buy more cattle."

GEORGE I. RECIPE FOR XMAS PLUM PUDDING.

Take some human nature as you find it,
The commonest variety will do;
Put a little graciousness behind it,
Add a lump of charity or two.
Squeeze in just a drop of moderation,
Half as much frugality or less;
Add some very fine consideration;
Strain off all poverty's distress.
Pour some milk of human kindness in it,
Put in all the happiness you can,
Stir up with laughter every minute,
Season with good-will towards every man.

Set it on the fire of heart's affection,
Leave it till the jolly bubbles rise;
Sprinkle it with kisses for affection,
Sweeten with a look from loving eyes.
Flavor it with children's merry chatter,
Frost it with the snow of wintry dells;
Place it on a holly-garnished platter,
And serve it with the song of Christmas bells.

Two drummers, having a few hours' lay-over in a small town, decided to dine at the village hotel. On looking over the bill of fare they noted that young fryers were special for that meal. One of them turned to the pretty waitress and asked:

"How's the chicken?"
"Oh, I'm all right," she blushed.
"How are you "

HOME

CANDY MAKING

Martha Hall.

There are a great many kinds of candy but great care is necessary to make some of them. A few general rules will greatly help in making good candy.

Stir all the materials thoroughly together and keep on stirring them until the candy reaches the boiling point, then stop unless directions are to the contrary. Fudges will be too thick at the bottom, too thin on the top of the cooking liquid, and will easily burn, if the blending is not perfect and the sugar perfectly dissolved.

Buy a candy thermometer. Sugar cooking takes more or less time according to the weather and a thermometer saves the patience. It will prevent you from taking off slow cooking sugar before it is done, a great mistake often made, and, even more important, it will keep you from overcooking your candy. Directions of importance go with it. Be careful not to dip it into deep sugar or fast boil-

ing sugar so far that you cannot read it. This makes work, and while washing it your candy may cook too long.

Use an abestos mat under your saucepan. It will take much longer for the candy to cook, but it will not burn on.

In trying out recipes in the free books given by makers of sugars, sirups, and chocolate, the safest or quickest to cook are those in which there is a quarter as much liquid added as sugar. The more chocolate, the safest or quickest to cook to the desired degree, and the more patience required on your part. A fudge with two cups of sugar and one-half cup of milk will cook much quicker than when there are two cups of sugar and a cup of milk.

No matter what kind of candy you are making the first essential is accuracy. It is a poor plan to guess at the proportion of an ingredient or to make substitutions. The admiration that every one felt for the old-fashioned cook who used a pinch of this and a dash of that is now directed toward the domestic science cook, with her careful measurements for everything and her balanced recipes and menus. In candy making more than in any other branch of the culinary art accuracy must obtain.

Cleanliness to the point of chemical purity is also equally necessary. It is best to have cooking utensils which are used only for candy, boiled frostings and sugar sirups. A dish clean so far as the eye can see may be permeated with enough vegetable odors or fat to injure the flavor of the candy cooked in it. It is well to use white enameled cooking dishes. Wooden spoons are best for stirring, as the sugar mass is less likely to stick to wood than to granite or aluminum.

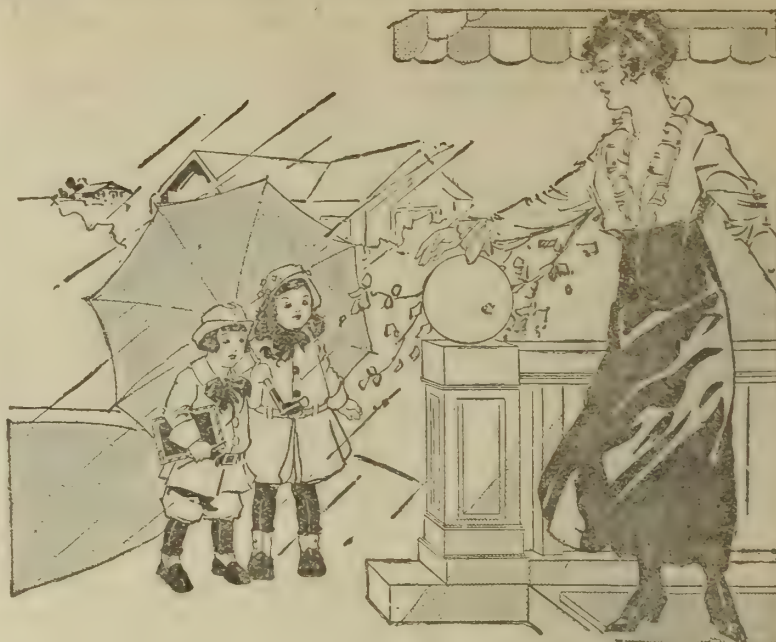
Possibly the simplest candies are those that are beaten after cooking. When finished their structure is granular. They form an excellent point of beginning for the candy cook. Perhaps the best known are the fudges. But in making as simple a candy as a fudge there is a right way—and no one knows how many wrong ways.

To make plain fudge add two cupfuls of white sugar to one cupful of milk or cream; melt a teaspoonful of butter and add to the mixture. Boil the mass to 238 degrees—the stage known as "soft ball." Remove the mixture from the fire and add a piece of butter the size of one-half of an egg; beat until it is thick; add while beating one teaspoonful of vanilla. Pour the mass upon a well oiled marble slab. Mark it in squares and leave it until cool.

If chocolate fudge is wanted add two ounces of unsweetened chocolate to the sugar.

The difference in consistency between stirred and unstirred candy is great, and no matter how far the candy cook progresses into the realm of more complicated candy-making the directions for stirring must be carefully followed. In each of the rules here beating is an essential part of the process, and the candy would be a failure without it.

Since it is made with brown sugar and nuts, pinoche is a pleasing change from fudge. To three cupfuls of brown sugar add one cupful of milk or cream. Heat and add a piece of butter the size of an egg; continue cooking to 238 degrees, or "soft ball." Add three-quarters of a cupful of broken nut meats and beat until the sugar begins to granulate. Pour the mass upon a well oiled marble slab,

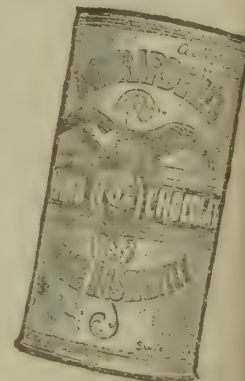


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mark into squares and leave to cool.
Peanut Candy.
One pound sugar.
One pound glucose.

One-half pound water.
Place upon the fire and stir until
it begins to boil, wash down the sides
of the pan and when it has reached

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They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use in the U. S. government and European War service.
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4	32.40	37.20	40.00	42.80	45.60	48.40	51.20
5	40.50	46.50	50.00	53.60	56.80	60.00	63.20
6	48.60	55.80	60.00	64.80	69.60	74.40	79.20
7	56.70	64.90	70.00	75.60	81.60	87.60	93.60
8	64.80	74.40	80.00	86.40	93.60	100.80	108.00

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Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.
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Dept.

Mention Utah Farmer when you write.

the "soft ball" stage add to the boiling mass one pound or one and one-half pounds of shelled peanuts raw, the Spanish variety preferred if obtainable. This should be stirred constantly very slowly and boiled on a medium fire. If the fire is too hot the candy will be inclined to burn. The fire can be modified or the pan moved back a trifle. This candy should be cooked to the "hard crack." At this stage it will be of a good amber color and the peanuts will be thoroughly roasted. In fact, shortly before the candy reaches the "hard crack" stage the peanuts will begin to pop like popping corn. Peanut candy can be boiled in this way properly without testing by hand.

MAKING DRESSES OVER

Perhaps the wives and daughters of wealthy men can afford to discard dresses before they are worn out, but the majority of women must get along with few new dresses, resorting to the remodeling of old ones for a large part of their wardrobes. To those who have never tried it, this may seem a disagreeable task, but one soon becomes interested in the work, and here is a genuine satisfaction in making a pretty and stylish garment out of an old one. The amount saved in this way would pay for many comforts that we have though we could not afford.

The first step in this work is to sort out garments that are past service, being sure that their usefulness as indeed departed. There are always pieces that will do for quilts and carpet rags. If they are ripped apart, washed and packed away, they will take up very little room and be ready for use when needed. Soiled wooden goods in the closet or attic attracts moths, and should not be tolerated. After inspecting and deciding upon the destiny of various garments, the first thing to do is to ve them a thorough airing, then look

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When you look into a sack of Utah-Idaho Sugar, upon the snow-white, sparkling crystals of purity, don't you take pride in the fact that this product--which is declared perfect by science--is produced right here at home?

The world's choicest sugars have been placed side by side with our perfect beet sugar, and noted chemists have said they could not distinguish a difference between the two.

You like to use Utah-Idaho Sugar because it's pure, dependable, and a home product of which you are proud. That's why most women say "Utah-Idaho, please" when ordering sugar

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ABSOLUTELY PURE

"Civilization begins and ends with the plow."

—Roberts.

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Second Semester at the College Commences January 30, 1917

Address inquiries to the President, Utah Agricultural College, Logan, Utah.

for spots and stains. Washing in gasoline is a quick and effective method of cleaning silk and woolen dresses that need only a little change to make them ready to wear. If the garment is to be made over, it must be ripped apart and all stitching threads pulled out. A few materials are alike on both sides, and when they are cleaned and turned are ready to use again. Perhaps you have a last season's dress that could be altered very easily, only the color is not what you want, or it is faded. That difficulty is easily overcome. Remove the trimming wash it in warm suds, and dye it a dark blue, brown, wine color or any shade you prefer with diamond dye for wool. If the style suits you, it will not be necessary to take it apart, and by adding a little new trimming, your dress will be as pretty as a new one. Or if it is to be made over, take it apart before it is put in the dye, and hunt up every piece of the material that was left when the dress was made to dye with it. All goods coming from the dye pot must be

thoroughly rinsed, dried in the shade, and carefully pressed. The variety of styles shown in the fashion magazine is so great that it should not be difficult to choose one that is becoming and suited to the material you have. The use of two materials in a dress is now so general as to be the rule instead of the exception, and this style invites ingenuity in combining materials and colors. The amount of fulness in the skirt seems a matter of choice, for we find the ready made skirts of any width from two and one-fourth to four yards at the hem. Many of them have pockets on either side, and button down the entire length in front.

Fur is the most popular of all trimmings, and the woman who has fur neck pieces or jackets that are past renovation at the furriers hands can utilize the least worn pieces to make trimming bands for suits, coats or dresses. These bands should be cut the same width and neatly pieced together, being careful to have all the fur turn the same way. By using a little time and patience, enough to

trim a dress can be reclaimed from very unpromising garments.—E. J. C.

JUST AN ERROR


The "guessing" farmer who tries to guess which crop will pay out the best each year is in the same class with other gamblers in futures. Farmers who are doing the best are those who have thought out a farming program.

Socialistic Tramp: "They order take all the money in the world and divide it up equal, so every guy'd git his share, that's what they order do."

Weary: "You're wrong, Willie dead wrong. If they ever done that the next thing they'd do they'd go an' divide all the work up equal, an then where'd we be?"


Milk that has a bad flavor often acquires this after it is drawn from the cow. It is more often due to such influences than to the feed the cows have had.

SIMPLEX
"FORD"
SPECIAL
AUTO OIL



INSURE your Ford against excessive wear, cut down the repair bills and increase the power of your motor with improved compression by using SIMPLEX FORD AUTO OIL. It's producing results for hundreds of Ford owners in this intermountain west.

Utah Oil Refining Co.
Refiners
Salt Lake



"EVERY DROP COUNTS"

TAKE THE TIME

Investigate this exceptional buy now.

This section is and will in the future be the banner farming section of the State. It will pay you to look it over.

50 acres of very fertile land at Elberta, Utah. Raises all crops successfully.

Within short distance of two good mining camps. Good market for all garden truck.

On railroad giving excellent facilities.

Prior water right at \$1.00 per acre if used.

Write us today or see

W. C. ALBERTSON
604 Dooly Bldg.
Salt Lake City, Utah.

Do not constantly dope the horses. Feed them right and exercise them daily, and they will not need medicine any more than their owner.

Cost of Growing Acre of Wheat

Chas. Whelwright.

The other day I heard a number of farmers discussing the question of what it cost to produce an acre of wheat. The prices given varied considerably in the estimation of those who were discussing the question. While I listened to these men I thought of an experiment in the cost of producing seven and one-half acres of wheat that was conducted in this valley by Dan H. Hillman. It was a year ago when this work was done.

The prices of grain used in making the summary is very low as compared to the market today, but the lesson can be drawn from the figure given. I do not believe this experiment was ever published in the Utah Farmer it was however given in the local paper.

Mr. Hillman kept a strict account of the cost, he hired all the work done, paying cash for same, for this reason the costs will be very fair.

Cost of Raising 7½ Acres of Wheat.

Plowing—	
Grain stubble, 4¼ acres at \$2.00,	
Alfalfa 3¼ acres at \$4.00.....	\$21.50
Discing and leveling 13 hours.....	5.50
Harrowing one-half day.....	1.75
Drilling and marking two days.....	7.00
Paid for use of drill.....	1.75
Seed 12 bushels at \$1.25.....	15.00
Formaldehyde.....	.50
Irrigating 3½ days.....	5.25
Six balls twine.....	3.75
Paid for binder.....	9.40
Shocking two days.....	3.00
Hauling and stocking two days, three men.....	10.00
Threshing toll 26½ bushels at 75 cent per bushel.....	19.85
Help—Six men and one team.....	11.55
Three meals for threshers at 30 cents plate.....	8.10
Yearly water assessment at 12¼ cents per acre.....	.95
Depreciation on machinery 10 per cent.....	3.00
Interest on money invested in machinery 10 per cent.....	3.00
Taxes at 75 cent per acre.....	5.60
Hauling to mill two days man and team.....	7.50
Total cost.....	\$143.95
Value of Crop.	
281 bushels at 75 cents per bushel.....	\$210.75
Cost of production.....	143.95
Profit on investment in land.....	\$ 66.80
Value of One Acre.	
37½ bushels per acre at 75 cents.....	\$ 28.00
Cost of Production of one acre.....	19.20
Net profit per acre.....	\$ 8.80

Some of these costs may vary according to the different localities, for instance, I refer to threshing, customs and prices are different in many places.

If the grain was not taken to the mill there would be storage to charge against it but often the price advances enough to pay for grain bins or other ways of storage.

The man who does his own work might reduce the cost a little, in fact in greater part of the \$19.20 would be earned by the one doing the work.

There is one important item that was not given consideration in the

above table and that is the straw. The alfalfa land that was plowed up produced much heavier straw than the other land. The value of straw to go back on the land to help fertilize it or the value for feeding purposes should have been considered it would have reduced the cost or increased the profit just which way you figure it.

(We would like to hear from others who have kept an account of what it cost to produce wheat, oats or barley. Will some of our readers give us this information, their names need not be published unless they desire. Editor).

greatest loss of fertility occurs when the manure is stored in loose piles.

LOW RATES HOLIDAY EXCURSIONS ON THE SALT LAKE ROUTE

Excursion tickets will be on sale at all Utah stations on the Salt Lake Route—also to points reached by the Utah Transportation Company via Milford, and to points on the O. S. L. R. R. in Utah, via Salt Lake City. Sale dates December 16th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 30th and 31st, 1916 and January 1st, 1917. Good returning until January 3rd, 1917. For tickets and further particulars see agents Salt Lake Route, Wm. Warner, A. G. P. A., Salt Lake City. adv.

The management of the dairy gives the farmer a continuous income and an advantage that he does not have in any other farm industry.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

THICK, SWOLLEN GLAND

that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be reduced with

ABSORBINE

also other Bunches or Swellings. No blisters, no hair gone, and horse kept at work. Economical—only a few drops required at application. \$2 per bottle delivered. Book 3 M. ABSORBINE, JR., the antiseptic liniment of mankind, reduces Cysts, Wens, Pains, Swollen Veins and Ulcers. \$1 and \$2 a bottle dealers or delivered. Book "Evidence" from W. F. YOUNG, P.D.F., 142 Temple St., Springfield, Mass.



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It would not be if you had used

MICA AXLE GREASE

Gives long life to your wagon. The mica makes a smooth bearing surface—prevents friction and wear.

Dealers everywhere.

THE CONTINENTAL OIL CO.

(A C. I. Corp. Corporation)



When compelled to milk cows on the side, always keep on the windward side, and you will be surprised at the amount of dust that will be taken from the pail.

WASTE LANDS COST MONEY

Nonproductive acres mean dead capital and a loss to the farmer. Every acre of nonproducing tillable land should be put to work or sold. Many farmers would make more money if their business were larger, but the size of a farm, from a financial standpoint, is measured not by the number of acres embraced in it but by the number that are producing crops, pasturing animals economically, or supporting a growth of marketable forest products. Nonproductive acres are loafer acres, and the money tied up in them is dead capital.

On every farm, however, there are certain areas necessarily devoted to non-productive purposes. Fences, ditches, lanes, and building lots produce nothing themselves, but they are frequently essential to production on the rest of the farm. Nevertheless, they may occupy in the aggregate a considerable percentage of the available land. It is a part of efficient farm management to see to it that this percentage is no higher than necessary.

It takes only 209 rods of untrimmed hedge and only 214 rods of zigzag rail or worm fence to waste an acre of what might be productive land. For the same expenditure of land one can run 459 rods of woven wire. Other considerations, of course, may make it desirable to use the hedge or the worm fence, but the waste involved is a factor that should not be overlooked.

Similarly, farm lanes often may be eliminated by a simple rearrangement of fields, headlands, or turning spaces at the edges of fields, avoided; and the farmstead itself, the group of farm buildings with their lots and yards, the garden and the orchard, made compact. In the case of the farmstead, however, considerations of health and attractiveness may well justify a slight sacrifice of economy.

While a little planning often will result in the saving of much land now devoted to these unproductive uses, a more difficult problem is presented by waste land—that is rendered unprofitable by swamps, ravines, rocks, boulders, etc., woodland that produces nothing salable, and pastures that are too poor to be profitable. Some areas are, of course, hopeless, and in that case they should be left out of the reckoning altogether. Before this is done, however, it will pay to look into the possibilities of profitable reclamation. Many unprofitable fields, for example, may be turned into productive pastures, or if they will not grow enough grass to make this economical they can be used for the production of timber. On the other hand, it frequently happens that woodlots which yield nothing but a little firewood for home consumption are permitted to occupy valuable land. In deciding whether such lots should be cleared and tilled, the cost of clearing, the increased value of the cleared land, the interest on the investment, the salable value of the timber products, and the added expense for firewood which will allow the disappearance of the timber must all be taken into account. With unwooded areas, the advisability of bringing them under the plow may be determined by comparing the probable cost with the market price of good arable land in the neighborhood.

If you really want a good crop in 1917, now is the time to plan and prepare. The success of any year's work on the farm depends, in no small measure, upon the preparation made before the previous year.

PRODUCING DOMESTIC

SUGAR BEET SEED

Sugar-beet seed was grown commercially in this country during the past year in several States from Michigan to California. The crop of seed harvested in 1915 was so satisfactory—according to the report of the Chief of the Bureau of Plant Industry, U. S. Department of Agriculture—in each of the areas tested that a largely increased acreage was planted this year.

This bureau has assisted in an advisory way in growing, selecting, and siloing the roots, planting them in the spring, harvesting and cleaning the seed, and, in general, endeavored to produce the largest amount of commercial seed possible at a minimum cost. Approximately 5,000 acres are in beet seed in this country this year, while we require to produce at least 16,000 acres for a normal planting, not considering the natural expansion of the beet-sugar industry. Each new mill will require an average of 200 acres in seed to meet its planting requirements. Seven new mills are in process of construction for this year.

The problem of drying the sugar beets for the purpose of increasing the amount of raw material for the mill and thereby increasing the length of the sugar campaign has been further investigated. The principal difficulty has been in finding or devising a dryer of suitable capacity to handle enough beets per day to be profitable. A satisfactory solution of the problem will be very beneficial in those small valleys in the intermountain States, where the acreage is not sufficient to support a sugar mill, and yet the sugar beets is necessary to the highest results in the farming operations.

THE DIRGE OF DISCONTENT

The present day mortal is more or less discontented. Seems to be the universal pastime—this spirit of unrest. Faces and voices everywhere bear traces of discontent.

Look for the face of the chap who seems on perfectly good speaking terms with the world the next time you go up the street. What you see will be worth while. Such faces are few.

Content is a state of mind. And countless thousands are striving eagerly to attain this much desired attribute of the human body.

But most of them look down the wrong lane; they reach content—temporarily—by artificial means.

If one can forget his miserable self even for a little while—if he can relieve the strain of discontent and supplant the ill-feeling for one of pleasure—content—he'll do it at the risk of present expense and even mortgage part of the future.

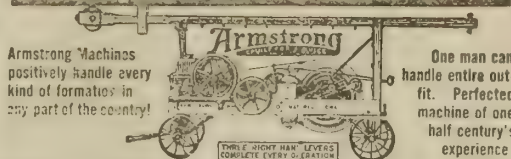
This is conceded to be one of the primary causes of the alarming traffic in liquor, tobacco, opium and other narcotics. These habits are worldwide in scope—go as far as you like into the primeval forest and you'll find people using these brain-deadening, body-destroying evils excessively.

Nor lives there a traveler who has penetrated the earth's end who has found the Lost Paradise—where everybody is free from fret and fear, the nest eggs of discontent.

Drugged visions put the less in worthless—nobody has ever reached Success—or Paradise—by the anaesthetic route.

Discontent grows grouches—and a grumbling grouch is a failure, no

Redeem Land by Deep-Drilled Wells!



Armstrong Machines positively handle every kind of formation in any part of the country!

One man can handle entire outfit. Perfect machine of one half century's experience

\$50.00 to \$75.00 profits a day made on an Armstrong Outfit. A few hundred dollars invested in an Armstrong Outfit will redeem several thousands of acres in a single season. Drill any formation, any depth, any place. Gasoline or Steam, Walking Beam, Spudding or Combination Outfits. Write for Free Illustrated Book. Explains everything about well drilling and oil engines.

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In your town! Your grocer receives it fresh every day, by express, in sanitary boxes. Don't let another meal pass without

ROYAL BREAD



The bread that made mother stop baking



this good bread will be a treat for the whole family. Serve it all the time. Its cost will be no more than home made bread, and it's always of the same quality, color and goodness.

Royal Baking Co., Salt Lake City, Utah

matter how much money he has made.

Yes, contentment is a state of mind—and there is only one way of getting it and that's through a clean, clear conscience and good character.

WEANING COLTS.

Pinto, Utah.

Utah Farmer:

At what age is it best to wean a colt?

J. H. Harrison.

Answer.

Colts should be weaned at from four and a half to six months old depending on the condition of both the mother and foal. If the mare is worked hard and is becoming poor the colt could be weaned earlier. As soon as a colt is old enough to eat it should be allowed some grain along with its mother and as time goes on it should be given a separate amount

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of grain increasing it as the colt gets older. Then at weaning time there would be very little difficulty because the animal would be strong enough to get along at most any time without the regular milk allowance. At weaning time cut down the grain ration for the mare allowing the colt a greater amount and I believe very little trouble will be experienced in weaning the colt. A mistake commonly made by most breeders is not allowing colts grain during their early life, thus not giving them the proper chance of growth and development.

BOYS AND GIRLS WILL HELP PRODUCE MORE LIVE-STOCK

(Continued from page 3)

buying associations, co-operative farm loan associations—they will own the federal farm loan banks—and the county agent will be the connecting link that will couple the rural districts with the markets, with sources of information such as the agricultural college and experiment station. We don't any of us know just what will be the result, but it will be big enough, for never before in the history of this or any other nation has so much intelligent thought been given to agriculture, or has so much good, hard cash been spent in its development as is the case in the United States today. It is high time, too, else we might have followed older civilizations that have declined and fallen because they forgot agriculture, the art by which men live.

And then the girls, why, they are learning those things about the gar-the comforts their mothers have done making life happier. They will have and then they will be earning a little without. Most of them are learning to make and do the simpler things; after a while they will get into the poultry clubs and the canning clubs, and then they will be earning a little money. And while they are learning to turn their talents to business account, their own outlook will be so enlarged that they will see in country life contentment and happiness, and they will not want to leave because they have found independence. Their loneliness will have vanished because the club idea fosters social life, and this, begun in school, will be carried through maturity. Leaders will be developed in these communities. There must always be some to follow, but there is such a thing as intelligent following that comes only by the educational process.

CORN IN UTAH.

Gordon Kirby.

The idea has for some reason become prevalent that corn can not be raised and brought to a state of maturity in northern Utah. In view of this idea the writer has taken pains to investigate this proposition. At Corinne located in the Bear River Valley with a rainfall of about 16 inches although sometimes falling as low as 11 inches, I find the most excellent results from corn raising and breeding. Five years ago Mr. C. G. Adney while East to buy some pure bred bulls got some extra good quality Reeds Yellow dent corn. This seed he planted and the crop yielded the first year was about forty bushels. Every year since the yield has run from 30 to fifty bushels. Mr. Adney has exercised great care in selecting his corn and retained only the very best for seed. In doing this he followed the usual process of selecting the largest, smoothest ears. These were carefully tied in strings

to winter them through. In the spring a carefully conducted germination test was made so as to get the most virile seed possible. Mr. Adney's corn is most excellent and has been pronounced by experts to be equal to that grown in Iowa in most respects. This successful experiment with corn in a region where we have both late spring frosts and early fall frosts coupled with a drought as we had this year makes it a possibility beyond any doubt to raise this the most choice of all fattening foods for sheep, pigs, and cattle while it also affords an excellent ration for work horses when fed at the rate of about 1 pound per 100 weight per day. So successful was this work that Mr. Adney contemplates putting in 40 or fifty acres next year after experimenting four years. The writer wants to impress strongly the fact that the conditions under which this corn was grown were not abnormal but rather less advantageous than one might find any where in the region from Brigham south as far as there is water obtainable. Of course it is necessary to select a hardy variety which can withstand the rigors of our cold nights as found all over Utah. This leads to the conclusion that the idea that we cannot get corn for silage to a point where the grain is in the doo as desired is erroneous. Let's all get in and work for more corn and more silos in Utah which will mean more cattle, more pigs, more farmers and more prosperity for all of us.

ALFALFA HAS SIX GRADES OF FEED

Many farmers seem to think that alfalfa hay is just alfalfa hay. But some of the growers have found out to their sorrow the buyer does not believe this. Indeed it seems probable that there are many real alfalfa growers in this state, and it would be a pretty safe bet that 90 per cent of the farmers who are raising alfalfa could not describe the six grades of alfalfa hay as adopted by the National Hay Association. Here are the grades for those who wish to know them:

Choice Alfalfa—Shall be reasonably fine leafy alfalfa of bright green color, properly cured, sound, sweet, and well baled.

No. 1 Alfalfa—Shall be reasonably coarse alfalfa, of a bright green color, or reasonably fine leafy alfalfa of a good color and may contain 2 per cent of foreign grasses, 5 per cent of air bleached hay on outside of bale allowed, but must be sound and well baled.

Standard Alfalfa—May be of green color, or coarse or medium texture and may contain 5 per cent foreign matter; or it may be of green color, of coarse or medium texture, 20 per cent bleached and 2 per cent foreign matter; or it may be of greenish cast, of fine stem and clinging foliage and may contain 5 per cent foreign matter. All to be sound, sweet and well baled.

No. 2 Alfalfa—Shall be any sound, sweet and well baled alfalfa, not good enough for standard, and may contain 10 per cent foreign matter.

No. 3 Alfalfa—May contain 25 per cent stack spotted hay, but must be dry and not contain more than 8 per cent of foreign matter; or it may be of a green color and may contain 50 per cent of foreign matter; or it may be set alfalfa and may contain 5 per cent foreign matter. All to be reasonably well baled.

No Grade Alfalfa—Shall include all alfalfa not good enough for No. 3.

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If you need money for additional improvements to buy livestock or any other purpose let us help you.

Because of our long experience in the land business, we are prepared to give you the best service and portection.

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Gem Herd of Improved Chester White Swine

This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions the World's Fair held at Frisco is last year. Both Sire and Dam, still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale all times.

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Idaho

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White Leghorn cockerels from males with others laying 250 or more eggs a year mated to females laying 200 and more. Few of these cockerels at \$5.00 each less than half their value. Get yours now.

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g type Poland China Hogs. Fall d spring Boars, out of some of the st breeding stock to be obtained. rite or call and see them.

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Utah

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BABY CHICKS \$11.00 PER 100
regulars, order-blanks, etc., upon re-
est. Candee Colony Brooders
rried in stock.

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rappers Today.

50 HEAD OF DUROCS
Sired by Utah Chief. For sale
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ed. Address

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FOR SALE—One 5-year old solid
color, Silverine's Ex. Isis Lad. Grand-
mother 18 and 20 pounds butter per
week—\$75.00. One yearling, solid
color, Gr. Sir Victorias Champ. Lad.
From 18 pound producers—\$50.00.
Will trade yearling for good young
bull. Mound View Farm, Brigham,
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sugar that is made in the
west, such as Table and
Preserving Sugar, they
are securing a product that
is not only 100 per cent
pure but which also con-
tains 98 per cent of energy
when consumed as food—
a body builder, a strength
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builder.

YOU NEED THIS FOOD

When you answer the advertisements
in this paper tell them you saw it in the
Utah Farmer. Always buy advertised
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WE DON'T ASK YOU TO MAKE FIRST PAYMENT FOR TWO YEARS!

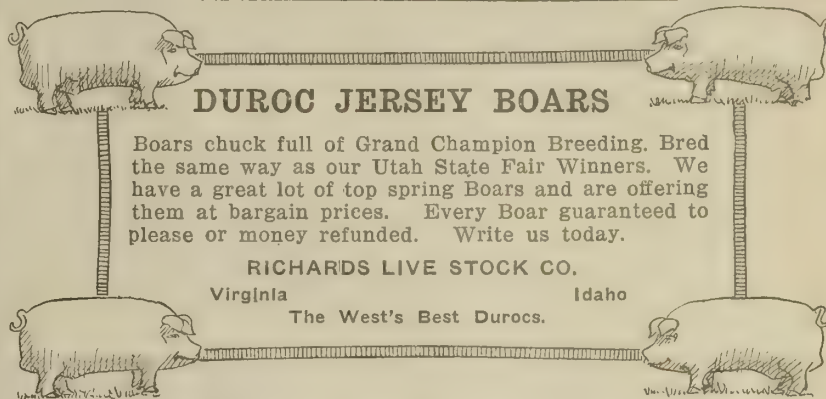
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get one of these ranches and begin life of independence. The land
is rich sandy loam with plenty of water. Daily mail service.
Splendid climate.

See us at once and be convinced that of all land offerings this is
most tempting. Call OR WRITE.

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Boars chuck full of Grand Champion Breeding. Bred
the same way as our Utah State Fair Winners. We
have a great lot of top spring Boars and are offering
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The West's Best Durocs.

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We are now booking orders for
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One Black Standard Bred Stallion
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Sired by Robert 1, out of Incas
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"MUSTS" IN DAIRYING.

The Pacific Homestead calls atten-
tion to the fact that the cow is a
"machine" that must be worked to its
greatest capacity as many days of
the year as possible.

Therefore—
She must be well fed;
She must have the best of care;
She must be given a plentiful supply
of pure water;
She must be milked at regular
hours daily;
She must have protection from
heat and flies in summer and cold in
winter;
She must be comfortable at all
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PURE-BRED POULTRY BEST

Pure-bred, or standard-bred poultry
possess many advantages over mongrel
or scrub stock. Experience has
proven that pure-bred stock, bred for
egg production, will lay a larger num-
ber of eggs than common mongrel
stock of a mixed breeding.

Pure-bred stock is bred for a pur-
pose, mongrel stock is not. There
are breeds for show, for egg-produc-
tion, meat-production and a combin-
ation of the latter two purposes.

Pure-bred stock produces an im-
proved quality of meat. The eggs are
more uniform in size, shape and color,
and always bring a premium over
mixed eggs in the market.

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Select homes and building lots any place in Salt Lake City, outside the company's subdivisions, are handled through this department. Every possible service is given to owners who list their property for sale, and full satisfaction is assured to purchasers.

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Islands and ranches, large or small, in Utah, Idaho, or adjoining states are listed and sold through this department. The men in charge of this work have been practical and successful farmers and ranchers themselves, and are therefore usually well prepared to give the maximum service to clients.

We aim to inspect all properties before recommending them to buyers. Locations, prices and terms are dependable. Farm and city exchanges and trades are handled through this department.

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The combined Service of these powerful companies is unequalled in Western America.

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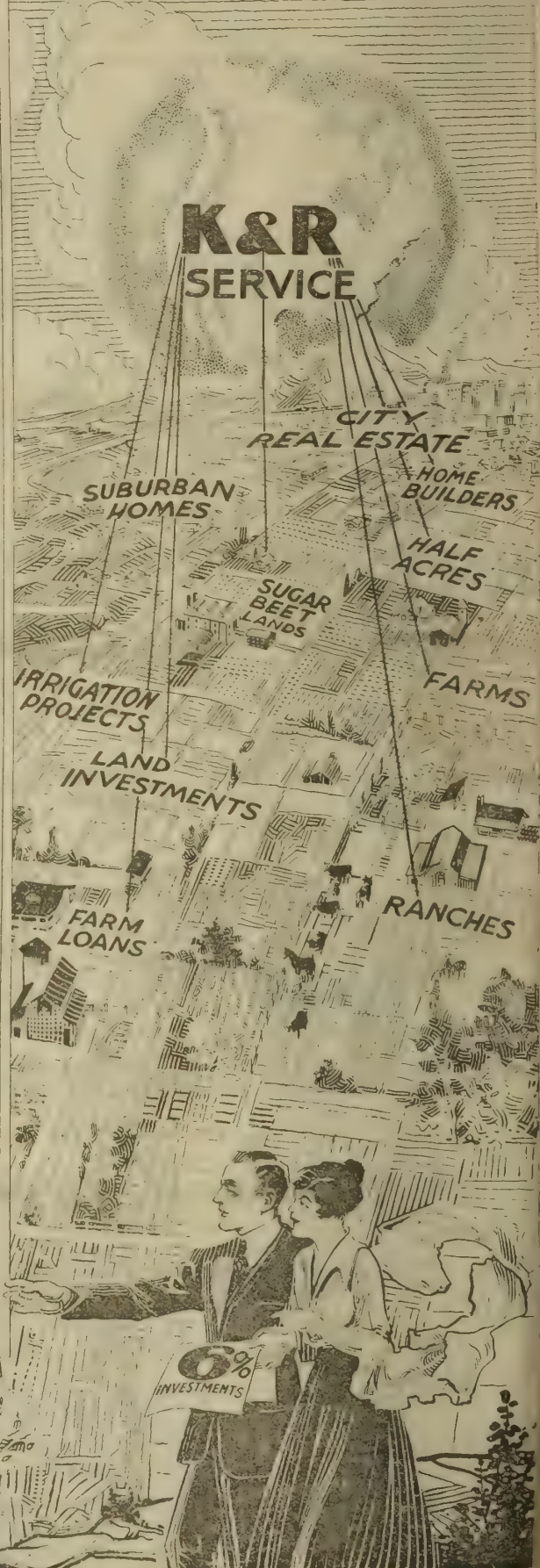
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OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 22

LEHI AND SALT LAKE CITY, UTAH

DECEMBER 30, 1916

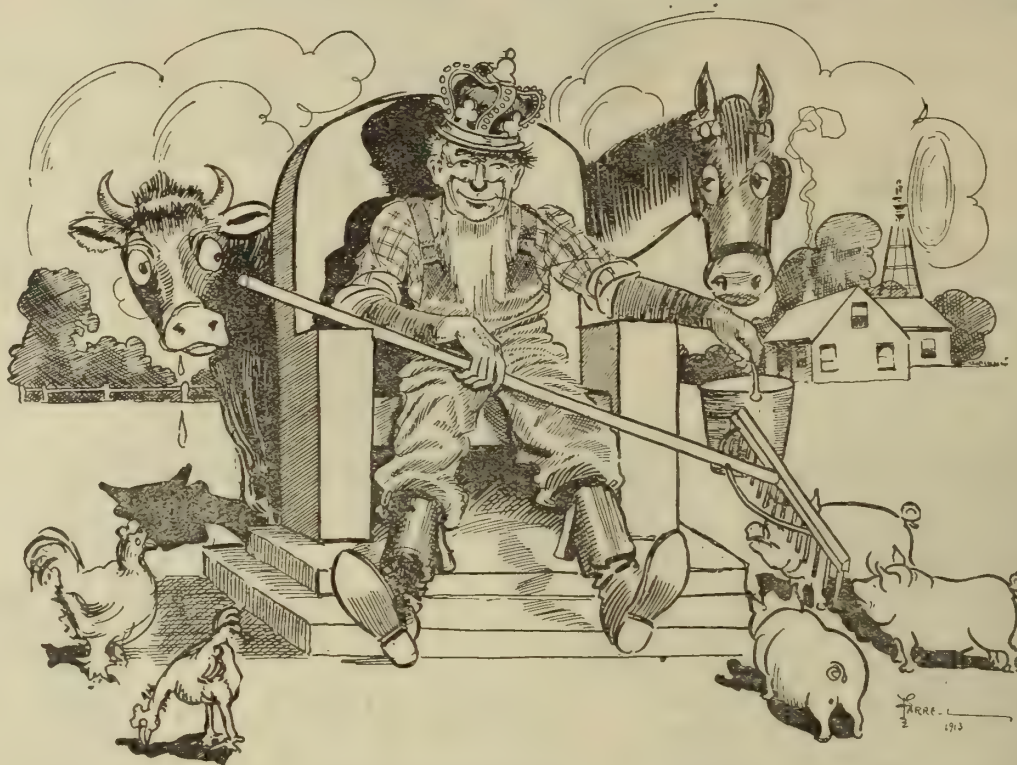


The Utah Farmer's Suggestions For 1917

Plan your work.

Be Ambitious, Industrious and Thrifty.

Make every foot of ground produce all the Live-stock and Agricultural Products possible, that modern methods and your experience will permit.



ON MY LITTLE PATCH I'M KING

What care I for trouble makers?
I can reap where I have sown.
I've a patch of ten green acres
And a roof tree all my own.

This is the song of all ages—
First in manhood's ranks shall stand
He who toils for no man's wages
Owns the soil and rules the land.

The year nineteen seventeen is going to be of more interest to the farmer than any of the past. Unusual conditions exist today and the farmer must plan to meet them.

What are your plans for the coming year—what kind of crops are you planning to grow? How much live-stock are you going to have on your farm?

The Utah Farmer plans to help solve these questions. Plans to help you make the most money you have every made from your farm. Experts and practical men will give the best they have through the columns of our paper. We will not merely tell you what others suggest doing but will tell you what

others are doing and how they are making money.

These valuable suggestions and helpful ideas will help every farmer to be ruler over his farm—help him to control the soil and rule nature for the production of a bounteous harvest.

To get the benefit of all this help you must be a constant reader of the Utah Farmer—if you are not a subscriber now is the time to send in your subscription. We are making a special offer in the way of an extension of time to all who send in their money within the next few days. If you are a member of the Utah Farmer family renew your subscription today. Send all letters to the Utah Farmer, Lehi, Utah.

Torrens System of Land Registration

Hon. Richard W. Young, Jr., Member of the Utah State Legislature.

For many years in the United States transfers of land were made by the buyer taking from the seller an ordinary warranty deed, relying upon the sureties and warranties of the seller that he had a perfect title to transfer. As years passed, however, and conveyances multiplied in numbers the purchaser was no longer satisfied with the warranty of his grantor. As property increased in value, and as it was developed, the mere recovery of the damages from the grantor no longer satisfied if there happened to be a flow in the title through which the land with the improvements placed thereon was lost. As a result, the prospective purchaser began to insist upon the seller supplying him with a complete history or evidence of his title, beginning with the time when the land was first owned by the government, and setting forth in consecutive order the details of each successive transfer. Such a history of the title to any piece of land is known as the abstract of title, which speaks for itself—an epitomized statement of every transaction, either deed, mortgage, release of mortgage, tax sale, lien, etc., in regard to the property in question. Inasmuch as practically every transaction in regard to realty, by statute, must be recorded on the books of the governmental unit in which the land is located, the abstract may be obtained, with more or less trouble, depending, of course, upon the length of its history and the number of individual transactions concerning it. Naturally, therefore, in some localities, as in the eastern states, an abstract of title will run back to the original land grant from some European king himself, possibly in the seventeenth century, and to show a complete history of this particular piece of land a good sized volume, or maybe volumes, are required.

The abstractor's business is to search the records for such entries, and his charges are based upon the number of entries which have to be copied and entered in the abstract. Should the searcher of the records overlook some entry, which vitally concerns the title, and the buyer buys on the assumption that the title is good and clear, his remedy would be either against the abstractor himself for the damages he has suffered or against the grantor upon his warranties. But in recovering damages he has in the meanwhile lost his land which, in a great many cases, means more to him than the mere pecuniary damages.

Abstracts cost money. The expense of many, even in this State, running into the hundreds of dollars, which expense under our present system of recording must be born by the seller, inasmuch as he agrees to supply the

prospective purchaser with a complete evidence of his clear title. The abstract being completed and delivered to the purchaser he in turn must have it examined by his attorney, and the fee of the attorney for such services will depend upon the number of entries and the work and time necessary to give them a complete and exhaustive study. All of which, naturally, takes time, in addition to the actual money outlay, and before a transfer or loan upon land can be made, several days, or weeks, or perhaps months may elapse. Just recently the writer finished a particularly difficult and extremely involved abstract of title over which he had worked for practically a month and a half—during which time the applicant for the loan (it happen to be in this case for the purpose of a mortgage loan) had to patiently wait for the consummation of his deal. It is difficult to conceive the trouble and inconvenience to which parties are put in such cases. There is no doubt but that our present system of land transfers is too cumbersome and far behind the mercantile spirit of the age.

The owner of shares of stock can obtain a loan upon them or make a transfer in a few moments; the owner of chattels likewise can readily effect a loan or transfer in short order; but when land is the subject of the bargain the work, time, and expense involved is manifoldly increased.

There is no reason why real estate, the foundation upon which all wealth is built, should remain the exception to the law of business. Whenever a man becomes the owner of surties, whether stocks or bonds, whenever he acquires personal property of any description, his title to it becomes defensible against the world. Why is real estate held as the exception? Why, with the possibility open to owners of every kind of property except real estate, to procure immediately funds on any other asset, is the exception made as to real estate; and why do long, antique, complicated, costly legal conditions remain attached to what should be a simple matter equal in rapidity and certainty with any other similar transaction.

Someone has said that a contract for the sale of real estate is about as difficult to consummate and as uncertain in its final outcome as the contract of marriage, and that it involved about as many perils and unseen responsibilities. No better exemplification of the truth of this statement can be had than the ten hypothetical statements of circumstances offered by Judge Cooley in his preface to Blackstone, any one of which would invalidate the title to land so far as anything on the record is concerned. Mr. Wharville has written rather a

voluminous work on abstracts dealing with numerous details both abstractor and examiner must be conversant with in order to properly make and examine a title to land, the ignorance of many of which would cause the purchaser to lose his land. These involve such questions as the value of the original patent, marriage dower, homesteads, rights of minors and other incompetents, the identity of parties, undiscovered wills, as to descent and distribution under a will or otherwise, probate decrees, rights of adverse possession, powers of attorney, tax and tax titles, validity of trusts, etc., etc. These, among numerous other questions, contain hidden dangers, the presence of which are most inimical to a good title. The records give no evidence as to these and have no conclusive proof of boundaries, which are officially described as an old tree, stump, stone, etc.

Thus it may happen that an absolutely faultless title so far as the record is concerned will be passed by the examiner, which in any one of these items may be vitally defective, and only remedied, if at all, by interminable and expensive law suits.

The present system leads to an enormous accumulation of books of record in the recorder's office. In New York County there are several thousand (in 1902, the last figures available, some 3500) volumes containing entries of deeds, 3094 volumes of mortgages, and each increasing at the rate of 250 a year. In Chicago there are 7300 volumes of deeds and mortgages. In Massachusetts in four countries we have respectively 2022, 1979, 1355, and 1300 volumes. Increases in three of these show, from 1860 to 1900, 150, 131, and 110 per cent. In 1900 the volumes had risen to respectively 2810, 2677, 1653 and 1606 volumes. The Suffolk register took 19 books of 640 pages of folio manuscript to record all deeds and other instruments from the first settlement of the country to the year 1700. By 1800 the number had risen to 193. There were 606 volumes at the opening of 1850. These had risen to 1250 by 1875, while in 1900 the number was 2606. This rate of growth continues in all thickly settled portions of the country. What this means for space and for difficulties of search can be readily judged.

These considerations would seem to lead one to the conclusion that while the old common law has made great strides forward in its development in pleadings, women's rights, and other branches of the law it has remained practically stationary so far as realty transfers are concerned. Oliver Cromwell realized the condition when, with his blunt common sense, he condemned such a system as a "Godless and pro-

fitless jungle." Or as a modern writer puts it, "This process of examining and abstracting all previous titles and facts relevant thereto had to be gone through whenever a new sale or mortgage took place, for a mistake in a link of title would probably make the solicitor liable to a ruinous action for negligence. Add to the uncertainty, complications, and expense inevitable in such a system, the lengthy recitals and parcels of the purchase-deed, its formality of seal and delivery, the doctrine of constructive notice, the technicalities of the wording in premises and habenda, the fiction of the legal estate, and its sequelae in the case of mortgages, the shadowy equities 'born of fraud and fear' haunting the most perfect conveyances, the subtleties of the judicial amendments and repeals of the Statutes of Uses, weak-kneed remainders without an antecedent estate, or limitations of chattels real without a trust, receipts for consideration sacrilegiously omitted from the indorsement of a deed, scholastic 'possibilities on possibilities' stalking through modern daylight, usual covenants, 'fruitful mothers of costs,' and estate clauses barren of estates, covenants for title that may be construed as notice of a flaw in title, and the constant fear of long and complex proceedings in the courts from some unsuspected deed coming to light—add these, and it is not difficult to sustain the proposition that reform is desirable, and that a system which has got rid of most of these incubi, with at least as much security as before, has claims for, as it has been found worthy of, imitation."

With this very general understanding of the limitations and failings of our present system I believe we can turn to a consideration of "what I mainly desire to bring before you—the Torrens System of land registration.

First in regard to its origin and history. The system takes its name from Sir Robert Torrens, Bart., a custom officer of Adelaide, Australia. Being impressed with the necessity of a simpler form of land transfer he conceived the idea, by analogy, of a system under which the title to land might be dealt with as we now deal with stocks, bonds, and bills of lading. Accordingly he drew up in detail a plan, the main provisions of which might be stated in brief to us as follows:—The person or persons in whom, singly or collectively, the fee simple title to any piece of land is vested, either at law or in equity, may apply to have the land placed on the register of titles. The applications are submitted for examination to a

(Continued on page 14)

Dairying

VALUE OF A PUREBRED SIRE

By Wilber J. Frazer, Chief of Dairy Husbandry University of Illinois.

A few poor cows may do little permanent harm to the dairy herd, but a poor sire will do untold damage. Frequently dairymen hold the penny so close to the eye it is impossible to see the dollar a little farther off, and this is just what a man is doing who has a good dairy herd of grade cows and thinks he is economizing by buying a poor or even common sire.

If the good purebred sire improves the milking capacity of his daughters only one and one-half pounds of milk at a milking, above the production of their dams, this would mean an increase of 900 pounds of milk for the ten months or 300 days an ordinary cow should give milk. The daughter would also be much more persistent milker, that is, would give milk for a longer time in the year, and she would regain her flow of milk better after an unavoidable shortage of feed, as in a summer drouth. These daughters may certainly be credited with 1,000 pounds more milk per year than their dams produced. At the low estimate of \$1 per 100 pounds this extra amount of milk would be worth \$10 per year. The average cow is a good producer for at least six years or until she is eight years old. It will on the average be four years after purchasing the sire before his first daughters will have brought in the

first extra \$10. Eight dollars and twenty-three cents kept at compound interest for these four years at 5 per cent will equal \$10, so the daughter's improvement or increase of income the first year is worth \$8.23 at the time her sire is purchased. The cash value of the daughter's improvement (inherited from the sire) figured in the same way for each of the last six years she gives milk is shown in the following table:

Improvement first year.....	\$ 8.23
Improvement second year.....	7.83
Improvement third year.....	7.46
Improvement fourth year.....	7.11
Improvement fifth year.....	6.77
Improvement sixth year.....	6.45

Improvement for six years.....\$43.85

The total increased income of a cow over her dam by having a good sire is therefore \$43.85

In an ordinary dairy herd of thirty-five to forty cows an average of seventeen heifers per year should be obtained, and twelve of these should be worth raising, making it easily possible for a bull to earn twelve times \$43.85, or \$526 per year. This would amount to \$1,578 in the three years that a bull is ordinarily kept in service.

Cost of providing every heifer one good parent:

	Purebred	Scrub
Cost of sire.....	\$150.00	\$ 30.00
Interest, 3 year, 5 per cent.....	22.50	4.50
Cost of keeping, 3 years.....	100.00	100.00
Risk, 3 years.....	50.00	10.00

Total expense, 3 years.....\$322.50 \$144.50

Value at end of 3 years.....	100.00	30.00
	\$222.50	\$114.50

Extra cost good sire, 3 years.....	\$108.00
Extra cost good sire, 1 year.....	36.00
Extra cost good sire, 1 daughter.....	3.00

Considering the male calves as worth no more than if sired by a scrub, it would then cost \$36 to provide one good, purebred parent for the twelve heifer calves which are raised each year, of \$3 per heifer. Where else can such an investment be found? Three dollars expended brings in an average return of over \$7 per year for six years, or \$43.85 in all. This makes a clear addition of \$43.85 to the income of each daughter, or a net profit of \$40.85 and of \$1,470 for thirty-six daughters in the three years. Here is nearly 1,000 per cent profit on the investment. The original cost of the good sire looks very small besides the \$1,470. It really pays, as nothing else on the farm pays, to put \$150 into the right kind of a dairy sire that will return practically ten times \$150 within three years.

An examination of details will show these estimates to be conservative. There is plenty of margin left for failures and unfavorable conditions. One thousand pounds of milk per year is a conservative estimate of the improvement of the daughter's production of credit to a good sire, but the details of figuring it may be varied to suit conditions in different herds and different localities. One hundred and forty dollars is certainly a liberal allowance for the purchase of a purebred sire, and results here named are based upon having a first-class animal at the head of a herd. A herd of only thirty-five or forty cows is taken for illustration, while a vigorous sire properly fed and exercised is sufficient

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- Has nearly \$1,750,000 assets.
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- Has written more new insurance in Utah, its home state, than any other company, local or foreign, for six consecutive years.
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While money is
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time to save.

Crops may not always be
so good, metals so high
and business so active.
Put some money away
in a savings account
NOW.

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Bankers

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for a herd of forty-five to fifty cows, provided he is not allowed to run with them. There is another distinct improvement of the good sire's daughter besides her milk production; it is the improvement of her blood or breeding, as the result of which her daughters will be better producers. This blood improvement of all the daughters accumulated through a series of years means a remarkable increase in the efficiency of the herd.

It is the common experience of all dairymen who have used a really good improved dairy sire that the investment has made them royal returns. The \$150 cost price looks "too big" only to the narrow vision that cannot see the natural improvement of the herd certain to follow. Many a dairyman might have reason to say that he cannot afford to pay a big price for a fine cow, but the same argument does not apply at all to the purchase of an improved bull, because the sire's influence spreads so much farther and faster than that of the cow.

If the heifer calves are to be raised for dairy cows there is absolutely no business reason on earth for keeping a scrub bull. The dairymen who think there is, pay a heavy price annually for maintaining that tradition. The scrub bull is the most expensive and extravagant piece of cattle flesh on

the farm. He does not stop at being merely worthless, but will lose the farmer the price of two or three good bulls every year he is kept. The dairyman could not afford to keep a scrub bull if the animal were given to him, if he were paid for boarding the beast and given a premium of \$100 per year for using him. The presence of the scrub is so many Illinois herds—many times without a single qualification except that he is a male—is an offence and disgrace to the dairy business and a plain advertisement of the dairyman's thoughtless bid for failure. The only thing on earth the scrub sire is good for is sausage, and it is high time that this plain and simple truth were given practical acceptance on every dairy farm.

By all means get a good dairy sire if you have to sell two or three cows to do it. The improved sire is, without question, the most economical investment in any dairy herd.



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There's Money In Dairying

Dairying in many respects is like any other business. Profits depend on producing the most milk of the best quality, at the least expense.

Proper feeding is one of the big problems, which may be solved by—



This highly nutritious mixture of grain and grain products, cotton seed meal and beet sugar molasses increases quality and quantity of milk, improves the health of the herd—and is economical to feed.

Send for free booklet—"Feeding for Results."



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PLEASURE AND PROFIT

There is genuine satisfaction in a profitable dairy business. Most people are interested in getting as much enjoyment out of their work as possible, yet comparatively few can devote all their time to pleasure seeking without thought of financial return. Some wealthy men have constructed beautiful buildings and placed fine cattle on their country places simply for pleasure and with little hope of ultimate profit. As a companion picture, the dairy experts of the department have called attention recently to the genuine satisfaction that is felt by the truly successful dairyman whose well-bred cows are sheltered by a well-built modern dairy barn of moderate price, and whose business pays a fair profit on every invested dollar.

As population increases, land advances in price, and dairying becomes more popular because the increased demand for milk, cream, cheese, butter and ice cream enables the well-managed dairy farm to pay a profit, even on high-priced land. As in any other productive enterprise, successful dairying depends upon two great principles—economical production and the successful marketing of the products.

Economical production of dairy products depends primarily upon the cow and upon intelligent feeding, care, and management. The unprofitable cow is a burden to the owner. One good cow often brings in more net profit than a dozen poor ones. The herd bull should be from a well-bred sire and high-production dam, and only well-bred heifer calves should be raised on the modern dairy farm. If a bull of first-class breeding and good individuality costs too much, a number of neighbors may club together and buy a bull of better quality than any one of them alone could afford. In many localities bull associations have been formed to meet just such conditions. Dairying can never become highly profitable until the scrub bull is forever banished from our dairy farms. This includes the registered scrub.

If dairying is to provide either pleasure or profit, the unprofitable cow must be disposed of. The well-bred high producer that takes her place must be properly and economically fed and cared for. Cow-testing associations have demonstrated that the feed of the dairy herd can sometimes be selected, balanced, and distributed among the individual cows in such a way as to decrease feed costs one-third and at the same time increase milk production.

No one should expect to derive either pleasure or profit from a scrub herd kept in a poorly lighted, unclean and fly-infested stable, or from a herd which obtains its chief sustenance from a nearby stack of wheat straw. Fortunately, such conditions are rapidly disappearing and in some localities have entirely disappeared.

Economy of production, however, is only half of the dairymen's problem. The truly efficient manager of a dairy farm must furnish a first-class product, then he must go a step further and get a price that corresponds to the quality of the article produced. High-testing milk should bring a higher price than low-testing milk, and it is not good policy to sell the former at a flat rate per hundred pounds, regardless of quality. High-grade dairy products should always command a price in accordance with their quality.

A Guernsey Grade Cow

year 13,388 lbs. of milk and 755 lbs. of butter fat, EQUIVALENT TO 878 lbs. of BUTTER.

USE A GUERNSEY BULL on your grade herd and you can produce such cows

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If a dairyman's business is well conducted it becomes highly interesting and fairly profitable. The successful dairyman drives his business, the business does not drive him; he does not merely keep cows, but makes the cows keep him. Such a dairyman may be expected to manage his farm so that he and his family can get both pleasure and profit therefrom.

CAN YOU TELL WHEN

A COW IS SICK.

Sometimes a valuable dairy cow is lost because the owner is uncertain as to whether or not the animal is really sick. When a cow shows indications of illness there should be no delay in beginning to check the trouble. The best thing to do is to call in a veterinarian if there is a good one in the neighborhood and the trouble shows signs of being serious.

In examining a cow with a view to finding out whether she is really sick or telling just what is the matter with her, the first thing to do is to take her temperature. A self-registering veterinary thermometer is a part of the dairy barn equipment on my farm, and every dairyman ought to have one. Place this thermometer in the rectum of the cow and allow it to remain there from three to five minutes. The normal temperature of the cow is from 98 to 100 degrees, and there are some animals in which it may be even higher. In young cows the temperature is likely to be higher than in older ones.

Any rise of temperature above the normal may be viewed as suspicious and should be kept in mind while the rest of the examination is being made. After getting a record of the temperature, the cow's pulse should be taken. The best place to do this is at the angle of the lower jawbone where it may be plainly felt. The normal pulse of the human being is around 72 per minute, but that of the cow is much lower, being between 50 and 60 to the minute. In case the pulse count is higher or considerably lower than these numbers the condition of the cow is not normal.

Respiration is another index of health or sickness. If a cow breathes much faster than usual or much slower than the normal rate this tells something of her condition. Count the respirations of the cow by watching the sides of the flanks or by pressing your ear to her sides where you can plainly detect the noise of her breathing. The normal respiration of a healthy cow is from 15 to 20 per minute, or just about that of the human in normal condition.

If it is found that the temperature, the pulse or the respiration are varying from the normal there is no question but that there is something the matter with the cow. If these variations are marked the animal is to be regarded as ailing and these variations taken in connection with the general appearance of the cow

should give a clear idea as to the need of dosing and treating her.

When the cow's nose is hot and dry, the hair rough and harsh to the touch, the eyes dull and glazed and the ears cold you have added evidences of sickness. Other signs to be watched for are lack of appetite, sudden shrinkage of milk and the cow's ceasing to chew her cud. These outward indications will usually be noted where the pulse, respiration and temperature are abnormal.

When the cow is found sick the first thing to do is to get her out of the herd and place her in comfortable quarters where she will not be near any other cattle. Where there is the slightest suspicion of any contagious disease this should be done at the earliest possible moment. Her milk must not of course be used as it would be unwholesome and where the cow has been attacked by certain diseases it might be actually dangerous.

While the doctoring of cows ought to be left to the veterinarian in most cases, there are certain simple remedies that should be kept in every dairy barn. These remedies should be placed in bottles or packages and carefully and plainly labeled and kept in a tight box with a strong lid. Some of the drugs that are useful are boric acid, camphorated oil, carbolic acid, vaseline, epsom salts, sulphur, raw linseed oil, spirits of turpentine, ground ginger and saltpeter.

Where a valuable animal gets sick the owner should take into consideration the amount of the investment and get a veterinarian to the barn as soon as possible. In some places it is almost impossible to get a good veterinarian within a reasonable distance, but when he is needed a good man several miles away is worth all he charges.—W. H. Underwood.

TREAT THE DAIRY COW RIGHT

By John Dabb.

The reason why a great many of our cows diminish in their production of milk during the winter time is that they are turned out in the cold, raw winds to roam about. Sometimes they stay out all day long. At other times they are left in the stable all day, watered probably once, lie on hard floors without any bedding, and fed on poor hay without any grain.

In the spring they are naturally poor and some of them sick. They are then unable to do their best in milk production.

On cold, stormy days keep your cows in a comfortable stable, feed them three times a day on good hay and ensilage, water them at least twice a day, milk regularly, and they will greatly reward you for your extra labor. Besides, after we have been humane to our dumb animals, then we have done only the duty which we owe to them.

There is nothing to which some of us look more for a livelihood than the dairy cow. Then let's treat her right.



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UTAH THE SUGAR STATE.

It is only a few years ago when the first sugar
factory was built. Today the development of
the sugar beet industry is going ahead at a sur-
prising rate. The first effort was a struggle and
sugar stocks went begging—today how different.

The farmers who were the first to engage in
sugar beet growing had much to learn. The
work was all done by hand, now machinery does
much to help in the work.

The farmers and the sugar companies both had
much to learn when the industry was first start-
ed in Utah.

Today it is one of our largest industries. The
farmers receiving this year several millions of
dollars for sugar beets.

Next year local sugar companies will operate
25 or 26 factories. If the growth continues,
Utah will be one of the greatest sugar manu-
facturing states.

HIGH PRICED HAY vs. SCRUB COWS.

A man said the other day, "The high price of
hay ought to cause the farmer to do away with
all the scrub cows." What action will be taken
with the scrub cow? Will you keep the good
cows and let the poor ones go?

Some of our farmers seem to be very fond of
a poor cow. Yet there seems to be no sensible

reason why they should keep her. Another man
suggests, "It is not so hard to milk the poor cow,
she gives less milk, and it does not take so much
time to care for her."

The most important thing for those who are
milking cows, whether it is one or twenty, is to
secure better cows. Cows that will give you a
profit whether the price of hay is \$8.00 or \$25.00
a ton. It cost very little if any, more to feed a
good cow than it does a poor cow. The returns,
however, are very different.

NEW LAW EFFECTIVE JANUARY 1, 1917.

The new law goes into effect the first of the
coming year, which compels all who use the
public domain for pasture to provide one pure-
bred bull of recognized beef type for each forty,
or fraction thereof, breeding cows.

The reason for this law is to help produce bet-
ter live-stock. Some will live up to the law and
buy only the poorest, cheapest bulls that will
comply with the law, others will buy only the
best that their money can secure.

"Bull peddlers" have worked the state trying
to sell some very poor animals. It is to be hoped
that live-stock men will look far enough ahead
and buy only from those who can be relied upon.
A pedigree may mean a great deal or it may
amount to very little but the individual animal
counts for a great deal if he is a part of your
herd.

Buy only the best for your own profit and the
good of the live-stock industry.

EVERY BOY SHOULD RAISE A PIG.

There is more than one reasons why the boys
and girls should have a chance to raise a pig or
a number of them.

That it will prove profitable has been de-
monstrated in the past.

That it will help to increase the live-stock of
our state is conceded.

When the boys and girls are given an opportu-
nity to do things they get a new vision of farm
life. With a knowledge of the first principle
of agriculture and a chance to apply them in a
business way, such as caring for and feeding a
pig, the boys are given a training, a schooling
they could get in no other way.

Arrangements have been made so that every
boy can have a pig to raise. The local people
must take the lead and help make the way so
he can secure it. What is being done in your
district? Act now, get in touch with the leaders of
this work and start things going.

If you do not know how it can be done write
to the Utah Farmer and tell us you want to help
the boys and we will see that something is done
to help them.

SECURE YOUR SEEDS EARLY.

It is very timely, the advice sent out by Dr.
Hill of the Agricultural College, "that farmers
should begin to look around for places to buy
their seed potatoes for this spring's planting.
Potatoes free from disease, known to have come
from high producing fields."

Seeds have much to do with the kind of a
crop you harvest. Not only is this true of seed
for potatoes but all kind of farm crops. If you
have not produced your own seed now is the
time to look about and see where you can buy
the best seed for planting next spring.

It is a poor policy to wait until the rush work
of spring is on and then try to do your seed buy-
ing. You have more time now. Plan well for

the kind of a crop you are going to grow and
then secure the best seed possible, for it will
pay in the long run.

From present indications the price of seeds
will be as low during January as at any time,
unless the unexpected comes along. The safe
way is to secure your seeds early of the very
best kind and save much work and worry when
the rush of the planting season is on.

CROP PROSPECTS.

We do not want to be called pessimists but
sometimes a warning helps, and this is the rea-
son we call your attention to crop conditions.
During 1916 the surplus of food stuff was re-
duced by a smaller crop and shipments to
foreign countries.

Recent reports from South America tend to
support the theory of the International Agricul-
tural Institute at Rome that the world will suffer
a food shortage next year.

Even today we read of a shortage of food
among the "people at home" in the warring
nations. When such conditions are known to
exist there is bound to be much suffering.

We produce more than we consume but Europe
can not expect us to continue if there is a short-
age. We have not experienced any shortage yet
and it is early to borrow trouble about 1917 har-
vest.

We have written all this to emphasize what
we have been trying to get every farmer to do
—plant every foot of ground and make it pro-
duce all the food stuff possible. A fair price
can be expected and should war continue high
prices may be secured. Increase your acreage
and if possible produce more per acre than ever
before.

ATTEND THE FARMERS INSTITUTES

Having in mind the idea of serving as many of
the people of this state as possible, the Agricul-
tural College have planned the annual round-ups
and farmers' institutes in many different parts
of the state. The first big one will be held at
Salina, January 9, next at Ogden, then at Logan
and Cedar City, others will be held at various
places.

These meetings are planned for the help and
benefit of the people, the expense and cost of doing
this work is paid from our taxes along with the
money furnished by the government. Many of
the meetings are largely attended while others are
very poorly attended. Who is to blame?

Every one interested in farming or farm life
should attend these meetings. No matter how
successful a farmer may be, none of them have
reached the point where he may not learn some-
thing by coming in contact with some of his
neighbors. To be successful in farming, it re-
quires a knowledge of soils, climatic conditions,
plant life, proper selection of seeds, and a more
careful preparation of seed beds, also the cul-
tivation of these crops while growing. The ques-
tion of stock raising, the best breeds, the ques-
tion of diseases, the right kind of feed, all of
these, and other problems are of vital interest to
the farmers.

This year The business Side of Farming, Mar-
keting of Farm Products, Veterinary Practice,
Nutrition of Children, Relation between Food and
Health, Electricity in the Home and Motherscraft,
will be discussed in these meetings.

Take a few hours or days off and attend these
institutes, go with the idea of being able to help
others, and in so doing, you will encourage your-
self in this important business of farming.

Utah Experiment Station Putting Out New Publications

"During the last year and a half three important publications have been issued by the Horticultural Department of the Experiment Station. The work contained in these bulletins is the work of several years' careful observation and scientific experimentation. One of these publications, "Variation in Minimum Temperatures Due to the Topography of a Mountain Valley, In Relation to Fruit Growing," should save the fruit grower thousands of dollars by guiding him in the choice of a location for the orchard. It will demonstrate to some that their orchards are in the wrong situation and their money and efforts are being directed in the wrong channel. Just now while the memory of last year's damaging frost is still fresh, this bulletin should be of paramount interest and its application to actual fruit growing prove most practical. This work is now being carried farther in co-operation with the Meteorological Department under the supervision of Dr. Frank L. West. The problem now is to find out the exact damage relative to different degrees of freezing temperature and the advisability of taking steps to prevent that damage if any exists. A bulletin treating of the first phase of this advanced work will come from the press in the near future and will be at the disposal of the public.

"The Utah Experiment Station has always been a pioneer in the field of irrigation. One of its recent publications deals with the irrigation of peach trees. This shows definitely the proper amounts of water to be applied and the proper time of application. It demonstrates these facts in such a striking manner that the erring farmer, who reads it, cannot help but mend his ways. Another project in progress, at the present time, is the irrigation of the young apple orchard. This is a problem that is much discussed, but discussed without the backing of authentic data as no exhaustive work has previously been done along this line. The teacher of

Horticulture, the extension man, and the farmer alike are "in the air" as to the proper amount of water required by the young apple tree. Discoveries in this matter have been made during the past three seasons and if the work continues as planned will add much to the efficiency of orchard management.

"Another question which has been considered is summer pruning of a bearing apple orchard. Authorities differ on the advisability of summer pruning and many of our fruit growers are spending considerable time in its practice. The Utah Experiment Station has demonstrated in Bulletin 140, by Dr. Leon D. Batchelor and W. E. Goodspeed, that the operation is superficial and therefore unprofitable. This small amount spent in experimentation has saved Utah farmers much money.

"Dr. Batchelor is preparing a bulletin based upon four years' record of the individual trees in a large bearing orchard. This bulletin will show the relative merits of five of our important commercial varieties of apples and the profits made in various years on each. It will further point out the productive qualities of individual trees and should have a direct bearing on the matter of cion selection in propagation. In fact, these records will form the foundation of numerous solutions to problems over which horticulturists are daily shaking their heads.

"This work has in the past been confined to fruit growing but is now being extended to the field of vegetable and truck gardening. Work was begun this summer along these lines. Information as to the best varieties of tomatoes for planting in this locality will be issued within the next month as a newspaper article or in popular circular form. Considerable work with vegetable crops is being formulated and will no doubt be followed with interest and profit by the truck farmers of the state.

"Another interesting feature of the work being considered is that of native shrubs and evergreens for home planting. We have looked up in our mountain fastnesses a wealth of native plant life that can be transplanted to our rural and urban surroundings with small cost and the production of remarkable effect. The questions are—What species are suitable for planting and how are they to be transplanted with safety. These questions the Horticultural Department of the Utah Experiment Station is attempting to answer.

"The Utah Experiment Station is an institution originated to meet the demands of the farmer and is being operated as such. If you are interested in these publications send your name to the Experiment Station.

THE IMPORTANCE OF WATER F. H. King.

The watering of land, which is irrigation, and the withdrawal of such part of that water as does not evaporate, which is land drainage, are two methods, one the opposite of the other; but, looked at in the broadest sense both are natural, and each is as old as the time when the rains descended upon the first lands which rose above the ocean's level. The periodic watering and drainage of the earliest rock fragments which covered the earliest lands, and which came to be the earliest soils, constituted at once the most primitive, the most profound, and the most persistent environment to which all forms of land life have been forced to adapt themselves.



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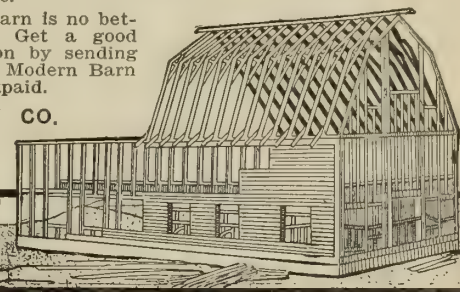
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Since the very earliest forms of life probably came into being in the water, and were composed in large measure of it, it is not strange that we yet know of no forms which can live without water, and to which, indeed, water is not the most fundamentally important substance and food. It is so, not more because it makes up so large a part by weight of all living and growing parts of plant life, than because it is the medium in which the transformation of the crude materials into assimilable food products takes place and through and by means of which these products are transported to their destinations at the various points of growth. It is only when we fully appreciate the important role played by water in crop production, that we are in position to see how necessary to large yields is the right amount of water at the right time, and thus be led to insure to our crops a sufficient irrigation and an adequate drainage.

TWO CENTS' WORTH OF ELECTRICITY ON THE FARM

Ten years ago central station electricity retailed for 18 and 20 cents per kilowatt in some communities, and was not obtainable at any price in most farming districts. Since then, improvements in electrical machinery, the extension of high power transmission lines and the development of

great power projects has brought electric power into hundreds of farm homes at a price within reach of the humblest farmer's purse. The rate is usually between 10 and 15 cents per kilowatt today, and recent improvements in motors and lights make the consumer's money purchase more light and power than it ever did before.

At 10 cents per kilowatt-hour, the price usually charged, engineers have figured that the price of a postage stamp will buy enough electricity to:

- Milk ten cows,
- Churn 20 pounds of butter,
- Separate 1400 pounds of milk in a cream separator,
- Do two large family washings,
- Heat an electric flatiron for half an hour,
- Run a sewing machine for four hours,
- Make griddle cakes on an electric griddle twice,
- Pump water enough to last the family two days,
- Sharpen an axe or scythe on the grindstone six times,
- Thresh five bushels of oats, four bushels of barley and two and one-half bushels of wheat,
- Light a 40-watt lamp (about 32 candle-power) an hour a day for five days,
- Make five slices of toast every morning for four mornings,

Make Money Sawing Lumber

Every farmer who has a woodlot can make money in his spare time sawing lumber with an "American" Portable Saw Mill. If he has no woodlot, he can do "custom-sawing" for his neighbors at big prices. An "American" mill will saw 2500 feet a day with 8 H. P. farm engine. Profit mounts fast. "American" Mills are designed especially for farm use. Easy to move and anyone can operate. Famous for quality for years. Get an "American" and start to make money.

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A Woodlot For Every Farm

Joseph A. Smith.

In planting a woodlot for a small farm it is generally best to make a mixed planting, so that material for all purposes may be available. Catalpa, locust and osage orange may be planted for posts; cottonwood, boxelder, European white birch, silver maple and wild black cherry for firewood; white elm, white ash, black walnut, large leaved linden, Norway spruce and tamarack for lumber. Our native red pine, botanically known as *pseudo-tsuga mucronata*, or Douglas spruce, is well worth planting. It is fairly rapid grower and easily transplanted. For fuel purposes and lumber ranks very high. One can also plant seedlings of the native junipers—the red and the white so-called cedars—as they are readily obtained from the mountains. The latter is, however, of slow growth, a bulletin of the Forest Service declaring that this species, *juniperus utahensis*, attains a diameter of only 12.85 inches, and a height of only 19.4 feet in 210 years! There appears to be, however, some confusion in the classifying of this species, for the white cedar known to the woodsmen of Cache valley—but still termed *J. utahensis*, makes a much faster growth. The writer has a specimen 12 feet high, and three inches diameter which is less than 30 years old. Its growth last year was nine inches, and it stands in a dry, gravelly creek bed. According to the government bulletin, at 30 years it should be only 5.7 feet high, and 1.8 inches diameter. Much finer species for both fuel and lumber are grown east and west of Utah, but most of them, like the beeches, hickories, oaks and some conifers do not withstand so well the rigors of our climate, and would suffer from the inexperienced management. Of course there are many other valuable species available, but the above list embraces those best adapted to climatic conditions in our state.

Mixed Plantings Best.

Straight plantings of any one species do not seem to thrive as well as the mixed unless exception be made of the Scotch Larch. This tree succeeds best in groups of its own family. In a woodlot of 1,500 white elms, 16 years old, growing upon the writer's farm, the trees at the lower end average about 6 inches in diameter and 30 feet in height; those at the upper or first-water end, 10 inches diameter and 45 feet height. A few red ash, scattered about the grove, attain the greater height but fail in girth measurement. A copse of white ash 700 to 800 in number, 14 years old, average 25 feet in height. Near by a small brake of silver maple—about 100—reach a height of 45 feet, and a maximum diameter of 12 inches.

But in a mixed grove, where some poplars were planted as nurses to the hardwoods, the elms, ash, maples, catalpas and black cherries are drawn up to 50 or 55 feet; the larches 60 and the European white birch 65 feet. Some black walnuts in the midst are still struggling upward, and apparently will have to receive help against their more vigorous neighbors. The poplars grew to a height of 75 to 85 feet and have been gradually eliminated.

This appears to demonstrate that tree-life, like human life, requires the stimulus of emulation. Some, like

men, are rotund in form, other slender, but all are benefited by proximity to their neighbors.

Farmers who contemplate tree planting on a large scale would probably find it advantageous to grow their trees from seed in nursery rows, but the discussion of this phase of the subject would carry this article beyond the limits contemplated by the writer. Yet it may be stated that trees can be grown as surely and as easily from seed as any other crop, and the young farmer who has the time, means and enthusiasm for this kind of work, can undoubtedly make it profitable. But for the majority, who have neither time nor inclination for such labor, it is safer and quicker to buy seedling trees of the varieties decided upon. Seedlings, two to three feet in height, of locust, ash, maple, elm, catalpa, birch, linden and many others, can be bought for a few dollars per thousand, and satisfactory results obtained from their planting even during the first season. The second season would arouse the planter's astonishment, and the third his enthusiasm. Thereafter his woodlot would become a perennial pleasure and profit, a "thing of beauty and a joy forever." And not the farmer alone would be benefitted; if the planting of woodlots became general, the desirability of the state as a place of residence would be increased a hundredfold; the landscape would take on a picturesqueness and beauty not now discernable; climatic conditions would be improved, and the wealth of the community augmented beyond measure.

Forest Land Near Home.

Surely it is a glorious thing to have one's piece of forest land near home! To be able to shoulder one's axe on a bright winter's morning; to plunge into the midst of your favorite wood and indulge in the exhilarating pastime of bringing some lofty monarch to earth! The grove is still and frosty, and the strokes of your axe ring sharp and clear among the trees. A rabbit goes scurrying down the snowy aisles and you pause for a moment before delivering the last finishing stroke. There is a yielding towards the light, a rustling of branches in the tall tree-tops, and your victim comes down with a resounding crash that echoes beyond the farm limits. Earth yields no purer pleaser than this! The gladness of life, exhilarating as a tonic, thrills the pulses of the husbandman who can thus enjoy the fruits of his early enterprise. Health, enjoyment and prosperity attend his footsteps.

Let us plant woodlots.

Various phases of the fruit industry have been under investigation ever since the establishment of the Station and the fruit situation at present shows that considerable work must still be done on the subject before the industry will assume the stability it should have.

Dairying, stock-feeding, animal diseases, and other phases of the livestock industry have been investigated in an effort to establish it on as profitable a basis as possible.

The topics mentioned and many others have been and still are the subject of scientific investigation in the Experiment Station, and it is believed that the results obtained will help very materially in giving to agriculture the place it should have among the industries. Only when this condition is realized can a complete and satisfying country-life be established.



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SETTING OUR FACES

NATUREWARD

L. H. Bailey.

The currents of civilization tend always to take us out of our environment rather than to fit us into it. We must recast our habits of thought so as to set our faces natureward. This is far more important than any effort at mere simplicity or toward lopping off the redundancies: it is fundamental direction and point of view.

The outlook to nature is the outlook to what is real, and hearty, and spontaneous. Our eager civilization prematurely makes us mentally old. It may be true that the span of man's life is increasing, but at twenty we have the knowledge and the perplexities that our grandfathers had only at forty. Our children may now be older when they are graduated from school, but the high school course of today is more complete than was the college course of fifty years ago. All this has a tendency to lessen the years of free and joyous youth. You have only to see the faces of boys and girls on your city streets, to discover how old the young have grown to be. In home and school our methods have been largely those of repression: this is why the natural buoyant outburst that I saw on the city thoroughfare challenged such instant attention and surprise. We need to emphasize the youthful life.

Therefore, I preach the things that we ourselves did not make; for we are all idolaters,—the things of our hands we worship. I preach the near-at-hand, however plain and ordinary,

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—the sky in rain and sun; the bird in its nest and the nest on its bough; the rough bark of trees; the frost on bare thin twigs; the mouse skittering to its burrow; the insect seeking its crevice; the smell of the ground; the sweet wind; the leaf that clings to its twig or that falls when its work is done. Wisdom flows from these; it can never flow from libraries or laboratories.

Work of The Agricultural Experiment Station

By Dr. F. S. Harris, Director Utah Agricultural Experiment Station.

The purpose of the Agricultural Experiment Station is to discover the facts about agriculture that will ultimately benefit the farmer. In many cases discoveries are made which at the time are not applicable directly to the farm, but later they may be of the highest service; hence, the Station devotes itself to the discovery of truth whether it seems to be immediately practical or not.

The Utah Station has been established about twenty-eight years. During this time it has investigated a great many phases of agriculture; but it has given special consideration to problems of local interest. It has been impossible to go deeply into all of the questions that have been studied; some have been given only passing attention, while others have been studied rather thoroughly.

The guiding principle which has been kept constantly in mind is Service. An effort has been made to serve first the state agricultural interests and next the similar interests of the nation and world.

Probably irrigation has received more attention than any other single subject, since it is realized that the chief factor limiting production on arid land is the scanty supply of irrigation water. If this water is used wastefully, the production will be low; while if it is used economically, the amount of farm products may be correspondingly increased. A study has been made of the economical duty of water under various conditions and the methods of applying water in such a way that the maximum crop production may be secured for each acre-inch of water. In Utah the yield for each acre-inch of water is a better standard for judging efficiency than the yield for each acre of land, since there is very much more land available than water. The work of the Station has shown that by using scientific methods the land that can be served by the present supply of water may be increased to three or four times the present area.

Experiments in dry-farming have yielded very noteworthy results. Hundreds of thousands of acres of land which perviously yielded nothing but sage brush and other useless plants have been made to produce bounteous harvests of grain and forage which have brought millions of dollars in wealth to the State.

In all arid countries much of the soil is likely to contain large quantities of harmful soluble salts, or alkalis. In Utah there are millions of acres of land more or less impregnated with alkali. If this land is ever to become productive, methods for reclaiming it must be devised. The Experiment Station, consequently, is devoting itself to a study of various phases of the alkali problem in an endeavor to find the best methods of solving it.

The need of better crops has constantly been apparent to the farmers in all parts of the country. The Station as a result has been working in quite a number of crops in an effort to breed strains that will be more productive and better suited to conditions in the State than those already in use.

It has been recognized that the fertility of the land is at the very foundation of all agricultural prosperity; consequently, experiments have been conducted on various phases of the fertility problem in order to discover what methods can best be used in conserving the natural fertility of the soil and increasing its productivity.

All crops are more or less subject to the devastating action of insect pests and plant diseases. These have at times threatened destruction to the entire crops of certain localities. The Experiment Station has been constantly alert to these troubles and has in a number of cases shown how they can be controlled. It is almost necessary for the State to maintain some agency like the experiment station where relief can be had in case of a serious outbreak of these pests.

HOW TO TRAP MUSKRATS

When trapping in deep water—that is, when the entrance of the house or den is situated in such a way that it is impossible to make an ordinary set—incline a board at an angle of 35 degrees, sticking one end in the mud and supporting the other with stakes. Just below the surface of the water arrange two nails so as to hold a trap. On the part of the board extending out of the water arrange some decoy. The animals in climbing the board will encounter the trap and get caught if the set is made properly.

Stake a pumpkin or head of cabbage in shallow water, surrounding it with several traps. Often several fur bearers may be taken in a single evening with a set of this kind.

BEES MUST BE PROTECTED TO SURVIVE THE WINTER IN GOOD CONDITION

The season for gathering nectar is now past and colonies of bees are preparing for the winter. This is the season for robbing since the bees have little to do except guard their stores or try to relieve some weak colony of part or all of its stores. Honey or other sweets should not be exposed at this season and where it is necessary to go into a hive smearing the honey should be avoided. Select the latter part of a warm afternoon and do not keep the hive open longer than necessary. Much of the supposed winter loss and spring dwindling is due to robbing at this season. Robbing should not be mistaken for the normal activity of a hive. To avoid trouble restrict the entrances of especially the weaker stands.

To make sure that the bees enter the winter in good condition, see that each stand has a sufficient supply of honey, which means about thirty pounds. Examine the hives and see that they have not settled to one side and that they pitch slightly forward. Make sure the hives are not cracked and that the covers fit well and see that they stand on well drained ground not too much exposed to the winter winds. Give a colony of bees plenty of good honey, a dry hive and enough protection to prevent the too rapid change of temperature inside the hive and it will escape winter injury and spring dwindling. A little attention given the bees at this time will mean much to them later.

Some hives should be wrapped with roofing felt or gunny sacks while others are sheltered with fodder, straw, boards or leaves. In providing such shelter, leave the entrance open and avoid the use of any shelter which may become soaked with snow and rain and make the brood chamber damp.

Crop Report

Washington, D. C., December 15, 1916.

U. S. Department of Agriculture Bureau of Crop Estimates.

A summary of estimates of crop production and prices for the State of Utah and for the United States, as compiled by the Bureau of Crop Estimates (and transmitted through the Weather Bureau), U. S. Department of Agriculture, is as follows:

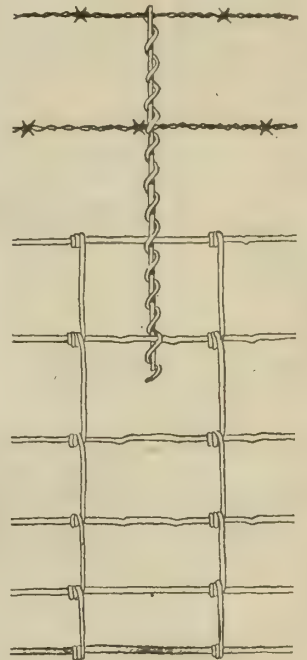
Acreage and production in thousands, i. e., 000 omitted.

Crops.		Utah.			United States.	
		Acre age.	Production.	Price, Dec. 1. cents	Production.	Price Dec. 1. cents
CORN, bu.	1916	13	429	115	2,583,241	88.9
do	1915	13	442	80	2,994,793	57.5
WINTER WHEAT, bu.	1916	250	5,000	152	481,744	162.7
do	1915	245	6,125	86	673,947	94.7
SPRING WHEAT, bu.	1916	76	1,900	152	158,142	152.9
do	1915	75	2,100	86	351,854	86.4
ALL WHEAT, bu.	1916	326	6,900	152	639,886	160.3
do	1915	320	8,225	86	1,025,801	91.9
OATS, bu.	1916	103	4,480	61	1,251,992	52.4
do	1915	100	4,700	45	1,549,030	36.1
BARLEY, bu.	1916	34	1,224	76	180,927	88.2
do	1915	34	1,445	52	228,851	51.6
RYE, bu.	1916	12	144	100	47,383	122.1
do	1915	13	202	65	54,050	83.4
POTATOES, bu.	1916	20	3,600	130	285,437	146.1
do	1915	20	2,500	63	359,721	61.7
HAY, tons	1916	384	845	1,500	89,991	1121.0
do	1915	394	985	800	85,920	1063.0
SUGAR BEETS, tons	1916	73	941	567	6,671	617.0
do	1915	56	658	491	6,511	567.0
APPLES, bbls.	1916		33	480	67,415	275.0
do	1915		142	285	76,670	207.0
PEACHES, bu.	1916		84		36,939	
do	1915		212		64,097	
PEARS, bu.	1916		12		10,377	
do	1915		31		11,216	

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HOME

SHORT METHOD FOR MAYONAISE

Break an egg into mixing bowl. Blend the desired seasonings, such as one teaspoon each of sugar, salt, and mustard, with one tablespoon lemon juice. Pour blend on egg, turn one-third cup oil on top of this, and beat with Dover beater. Add lemon juice and oil alternately, until desired consistency is reached. About three tablespoons lemon juice and two cups oil.

Nut Pudding.

Nuts are nutritious and may be used in different forms that are easily prepared. A pudding much liked in the South may be made as follows:

One pint pecans, chopped fine or run through a meat cutter; 1 full cup of mashed cooked rice; 3 eggs, add yolks to nuts and rice, sweeten to taste; sweet milk enough to make consistency of custard. Bake until set. Beat whites of eggs, put on top and brown lightly. This pudding is delicious with whipped cream, but may be eaten with liquid sauce having any preferred flavoring.

Baked Potatoes and Cheese.

Bake potatoes, split lengthwise, remove, mash and season pulp. Beat until light; refill the skins, pile lightly and sprinkle with grated cheese. Place in the oven and reheat until the cheese is melted.

1 cup grated cheese.

 $\frac{1}{4}$ cup pimento chopped.

Salt and pepper.

 $\frac{1}{4}$ cup ground nut meats.

Cream cheese and add pimentos. Add flavoring and mix well. Form into balls, roll in nut meats and serve as a salad.

Combination Salad.

2 cups shredded cabbage.

 $\frac{1}{2}$ cup cooked peas. $\frac{1}{4}$ cup celery. $\frac{1}{4}$ cup nut meats. $\frac{1}{4}$ cup diced cheese.

Combine the above and mix slightly. Add salad dressing to moisten and serve in lettuce cups.

Dried Fruit Salad.

6 cooked dried prunes.

3 tablespoons cheese (creamed).

1 tablespoon dressing.

Lettuce.

Remove pits from well drained prunes, fill cavities with creamed cheese rolled in chopped nut meats. Arrange on lettuce leaves and add salad dressing.

Apple Pickles.

Wash the apples (crabs are of the best), and cut out the blossom part. Apples slightly wormy may be cut in two and the core removed. They will shrink about half in cooking. In a granite kettle put 4 cups vinegar, 3 cups sugar, $\frac{1}{2}$ teaspoon cloves, 1 teaspoon allspice, 2 teaspoons cinnamon, all spices ground and put in a muslin bag. When the sirup boils drop in the apples and cook till tender. Put in glass jars while boiling hot, and seal. These will be found sweet and mild.

If the sirup is made of equal quantities of vinegar and sugar, otherwise same as in recipe just given, you will have a good pickle, only stronger, and the apples will keep without sealing. As fast as the apples are cooked pack them in a jar, and when the jar is full cover with the sirup. More sugar and vinegar will have to be added as it boils away. When the jar is cold tie plain paper over the top and rub well over the paper, top and sides, with the white of egg.

APPLE ROLL WITH LEMON SAUCE

Two cupfuls flour, one-half teaspoon salt, four level teaspoons baking powder, two tablespoons soft butter, two-thirds cup milk, one cup chopped apples, three tablespoons sugar and one-half teaspoon cinnamon. Sift flour, salt and baking powder together, then mix in the butter and add the milk last. Stir well and roll dough to one-fourth inch in thickness. Spread with chopped apple, sugar and cinnamon. Roll like jelly roll, cut in three-quarter inch slices, bake in buttered pan flat side down. Bake fifteen minutes in hot oven. Serve with lemon sauce. To make this sauce: Boil three-fourths cup sugar in one-half cup water for five minutes. Add two teaspoons butter, one teaspoon lemon juice, and a dash of nutmeg.

FRUIT! FRUIT! FRUIT!

An apple a day
Keeps the doctor awa.

A pear, without question,
Helps the digestion.

Much better than meat
Are grapes, good and sweet.

Oranges, without doubt,
Prevent rhuma and gout.

Lemons, though sour,
Gain favor each hour.

Grapefruit, above all,
Is a breakfast's best call.

The people out here,
Prefer fruit to beer.

That's why they consume
So much fruit, we presume.

APPLE FLOAT

Peel six big apples and slice them. Put them in a sauce pan with just enough water to cover them and cook until tender. Then put them through a colander and add the grated rind and juice of half a lemon, sweeten to taste and stir in a trace of nutmeg. Fold in stiffly beaten whites of four eggs and put the dish on ice. Serve with whipped or plain cream.

LINSEED, OR FLAXSEED
MAKES BEST POULTICE

Linseed is generally considered the best material to use for poultices, because, as it contains considerable oil, it can be used at a higher temperature than other substances without danger of blistering the skin.

Have for the adult, about one and one-half pints of water boiling forcibly; into this sprinkle slowly, stirring the water with a spoon while doing so, sufficient flaxseed to make the mixture just thick enough to be easily spread with a knife, but not so thin that it will spread by itself.

The mixture must not be allowed to stop boiling during the addition of the flaxseed and should be beaten lightly. Spread on to the muslin evenly about one-third of an inch thick.

Mustard is often added to flaxseed poultices in order to increase the counter-irritant property. The proportion of mustard to flaxseed used is, for an adult, one to eight, and for a child, one to sixteen. Dissolve the mustard in tepid water and add it to the poultice after the flaxseed has been removed from the fire; then, beat the poultice well so that it and the mustard will be thoroughly mixed.

A poultice should not be left on longer than one hour, as after that it is not even as warm as the body.

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They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use in the U. S. government and European War service.

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PRICES

Tires Tubes		Tires Tubes	
30x3 in.	\$ 8.50 \$2.30	32x4 in.	\$17.45 \$4.65
30x3 1/2 in.	10.55 3.10	36x4 1/2 in.	21.20 5.60
32x3 1/2 in.	12.75 3.20	36x4 3/4 in.	22.50 5.75
33x4 in.	15.75 4.20	37x4 1/2 in.	23.60 6.20
34x4 in.	16.70 4.35	37x5 in.	26.30 6.60

All other sizes not included in above list also furnished. Non-skids at 10% additional. Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified.

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Double Service Tire & Rubber Co., Akron, O. Dept.



Mention Utah Farmer when you write.

After removing the poultice, dry the surface of the skin and if it is very red, apply a little oil or vaseline. —Alice Barnard, Colorado A. C.

CARE AND REPAIR OF CLOTHING

Ruskin says, "Clothes carefully cared for and rightly worn, show a balance of mind and self-respect."

The girl who wishes to appear well dressed and properly gowned will not neglect the little things that add to the freshness and durability of her clothing. The little attentions, such as replacing a hook, fastening a button, removing spots, brushing carefully, pressing, hanging on hangers adapted to the article, replacing soiled collars and cuffs by fresh ones, airing and folding along seams as near as possible, take but a few minutes if done promptly and keep the wardrobe in good order.

Suggestions.

Keep coats, waists and dresses on coat hangers and skirts on the kind that will keep the bands straight. In clothing when it is removed at night and wear a different set to sleep. If moist clothing is thrown around in heaps or tossed into a dark corner of a closet or trunk, it can never appear fresh again unless it can be laundered. The wearing of clothes not what tells so sadly upon them, but the manner in which they are cared for. A few garments nicely made, well fitted and properly cared for are preferable to twice the number of inferior quality and make. Waists in service may be kept in bureau drawers or boxes. They should first be carefully folded and if fancy the sleeves and bows stuffed with tissue paper. Good gowns if hung in closets should have cover bags slipped over them. Skirts and coats with bias seams are not improved by hanging, the bias and parts are apt to stretch out of place. All steel pins should be removed from clothing, even if it is put away for just one

night, as the least dampness may cause rust spots. Pressing adds much to the appearance and durability of a suit or skirt, as well as to the comfort of the wearer. Press with a hot iron and damp cloth on the right side over a thick pad until nearly dry; then turn the garment on the wrong side and press dry. Woolen goods will mark or shine if pressed without a cloth, and the texture of silk materials will be injured if the iron is permitted to get too hot.

Footwear.

Care of shoes and rubbers—It is better to have two pairs of shoes and alternate in wearing them. The pair not in use should be kept on shoe trees or something improvised to keep them stretched. A good polish keeps the leather. When shoes get red the thread rots and soles separate; rubbers will protect them. These will last a long time with a little care. Wash them promptly after wearing. Do not let mud dry on them, nor leave them in direct sunlight or near heaters, as heat spoils and mud rots them. Soft paper stuffed into heels and toes keeps them in good shape. Adhesive plaster or a few stitches will help if they become torn or split at the sides.

Packing Away.

Care of clothing between seasons—All clothing for the season should be carefully brushed, cleaned, repaired and put away in tight cotton bags, boxes or packages. If these are plainly labeled with their contents, time will be saved when they are needed. Woolen articles should receive a good sun bath and careful inspection for possible traces of moths. Gum camphor, black pepper, tobacco leaves and tar paper are some of the moth preventives that can be used in packing clothes away. Garments that are outgrown should be disposed of. In folding lay the articles on a flat, large surface and fold on the seams if possible, paying particular attention to sleeves and collars. Coat lapels should be turned to lie flat, collars turned up, and the coat folded through the center seam. Summer clothing should be clean and smoothly folded. Blue tissue paper is said to prevent white materials from turning yellow.

Colored Materials.

Care of colored clothes before washing—It pays to set colors before laundering. For blue, use one-half cup of vinegar and one tablespoonful of salt to a pail of cold water. Lavenders may be set with a tablespoonful of sugar of lead to a pail of cold water. Pinks and blacks may be treated with salt, two cups to a pail of cold water. Pinks, lavenders, reds, creams, yellows, in fact nearly all colored materials, should be allowed to soak several hours before washing.

Renovating and cleaning of clothing. Never attempt to make over and clean clothes unless the material is good enough to make it worth while to do the work well. Faded materials may be freshened by cleaning and dyeing, but directions should be carefully followed in the selection of dyes and the processes involved.

Stains.

Stains may be removed easily while fresh. Fruit stains may be removed by pouring boiling water from a height of a foot or two through the fabric stretched over a basin. Ink stains may be removed by squeezing the cloth out of milk, treating with javel water, or with a paste of uncooked starch and milk. Iron rust may be removed from linen and cot-

What's The Reason?

Haven't you felt a little curious to know why so many farmers, mechanics and laborers are wearing

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"NEVER-RIPS" OVERALLS

and

"MADE-RITE" SHIRTS

Jno. Scowcroft & Sons Co., Mfgs.

Ogden, Utah.

Farm Mechanics Dept.

REPAIR WORK.

J. M. Woodhouse.

There is an idea prevalent through the country that when winter comes and it gets too cold and disagreeable to do outside farm work that there is nothing to do then until spring comes, this idea is wrong, because now is the time to take the spring tillage implements into the repair shop and put them in shape for spring work, so that when the rush of work comes on it will not find you unprepared for it.

During this cold winter weather is the time to take the riding plow into the repair shop and see that your points are sharp and the devices on it are in such a condition as to last entire period of rush-work in the spring. That the wheels are in first class condition and the boxings in them are not worn beyond use. All badly worn bolts should be replaced with new ones, and all bent or broken parts should be straightened or replaced.

You might also sharpen the teeth of the spike tooth and spring tooth harrows and replace the worn bearings in the disc drill. If last spring some of the discs did not run very well and were always stopping and clogging, it is more than likely due to the fact that the bearings in those discs were worn out and should now be replaced. Make preparedness your watchword.

Note—If you have any kind of a machine that has been giving you trouble we will be glad to help you solve the difficulty, whether it be an implement or your car, or what not. We will bring the best there is in the state to help you find the trouble and remedy it. In asking for assistance please give kind of machine, name size and style and the makers name. Address inquires to the Farm Mechanics Department, Utah Farmer, Lehi, Utah.

ton by using lemon juice and salt. Grease spots may be removed with a good soap and hot water, or if the material will not stand laundering, it may be treated with absorbents such as French chalk, magnesia powder, or blotting paper and a hot iron. If the iron affects the goods it should be held above it, not permitted to come in direct contact. Blood stains may be removed by making a paste of starch and applying it to the spot. It may be necessary to repeat the process several times. When solvents are used they should be the purest and best. Use enough to thoroughly cleanse the article. Benzine, gasoline, naphtha and the explosive solvents should be kept away from fire. Turpentine is good for removing grass and paint stains.

Mending.

Since materials can be produced so cheap, mending is becoming a lost art. However, no one disputes the utility of mending. A well made garment should not be discarded when a patch neatly put in will prolong its usefulness. Children, especially, should not be allowed to wear garments out of repair for it has a demoralizing influence upon their character. "A stitch in time saves nine." This is particularly true of knitted materials that frequently come to pieces before you are aware. Darning the thin places before the hole come through is true economy of time and effort. Net may be helpful in repairing large holes. The size of the thread used in darning should correspond to that of the material.

In mending the knees of boys' trousers, set in a piece large enough to be taken into the seams and the patch will not be so noticeable. Bodices worn out under the arm may be best mended by setting in a new under-arm piece. To lengthen garments, let down the hem of the skirt and face it, or apply a false hem, or let out tucks. Facings may be applied to neck and sleeves.

There is no better or cheaper place to develop a young horse and put him in proper shape for market than on the farm.

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UTAH-IDAHO SUGAR
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Live Stock

BREEDING OF YOUNG

BROOD SOWS

"At the Missouri Experiment Station for the last six years, an experiment has been conducted for the purpose of determining the results of breeding very young females for several generations. To determine just what temporary or permanent effects, if any, follow this practice, the experiment station has bred one group of sows and their offspring at the first appearance of heat, and has continued this practice through many generations. Another group of sows has been bred first when half mature, and still another group at full maturity.

Breeding Young Dwarfs Sows.

"The most significant effect that can be measured is the dwarfing effect which early pregnancy and lactation has upon the mother itself. The young sow that is bred to farrow at eight or nine months of age stops growing for a time. If she is well fed, and bred only once a year thereafter, she may practically recover from the dwarfing effects of early gestation. If the sow is not generously fed, or if she is bred twice a year, even with the best of feeding she is permanently affected and will be smaller at maturity than other sows bred at an age when the body is better developed. This result on the mother is not a serious practical matter if she is well fed throughout her life.

"It is a popular opinion that gestation is a serious drain on the physical system of the pregnant mother. It has been generally taught that a sow in pig must not only maintain her bodily functions and provide for normal growth if immature, but must furnish the nutritive material essential for the development of the unborn young. The investigations at the Missouri Station indicate that pregnancy is not an exhaustive period. The young pregnant sow will grow normally without great additional increase in the food supply. Indeed, there is a suggestion in the results so far obtained that pregnancy may actually increase the nutritive efficiency of the mother during gestation to such an extent that growth actually proceeds more rapidly.

"How does it happen then that breeding immature animals results in checking the growth and decreasing the mature size of the mother? The exhaustive factor is lactation. In all of the cases studied, it was found that while the growth of the immature mother proceeded without interruption during pregnancy, after the birth of the pigs and all during the period of lactation, the growth of the mother was apparently stopped. No apparent growth takes place while the mother's suckling young. After weaning the pigs, the immature mother begins to grow. During this period she may grow even more rapidly than other sows of the same age which have not passed through the periods of pregnancy and lactation. We must conclude, therefore, that the great cause of the dwarfing of the young mother is the strain of lactation and not pregnancy.

Pigs From Young Sows Good As Any

"The offspring of very young or immature mothers show every evidence that they are as thrifty and as valuable for every purpose of prac-

tical animal husbandry as the offspring of the more mature mothers. It must be remembered, however, that the immature mother is not able to supply as much milk for the nourishment of a litter, and consequently special care must be exercised in providing an abundant supply of nutritious food, otherwise the offspring of the immature mother will be smaller and weaker. This result, however, if it occurs, is due solely to a deficiency in the food supply and not to any hereditary effect.

"It must also be said that no evidence of any sort has been obtained which would indicate that the long continued practice of breeding immature females will result in decreasing the size of the breed. The capacity to develop to a certain size at maturity is hereditary. The breeding of young females does not affect the germ plasma in which are to be found the inherited qualities that determine the final character of the breed.

"What then is the best age to begin breeding young sows? The answer must be that this will be determined by the purpose of the breeder, but primarily by the development of the young sow. A well fed sow that shows good development may be safely bred younger than sows kept under bred younger than conditions. It is certain that sows bred to farrow when one year old will be checked in growth, but this is not necessarily a permanent effect.

"It is clearly shown also that young sows and their litters must be more generously fed than older sows, otherwise the sow may not reach the normal size of the breed at maturity. Breeders of registered hogs whose object is to produce the highest developed and most perfect types of their particular breed at every age will find it better to delay breeding to a somewhat later time, and thus avoid the check to development which is sure to follow lactation.

"From an economic point of view the sows which are mated young are generally more profitable than those which are allowed to remain open too long. The exercise of the breeding functions at a younger age is also generally favorable in developing in the young female all those physiological qualities which we include under the term the breeding power of the animal."—M. B. Munford.

CHRONIC INDIGESTION.

Minersville, Utah.

Utah Farmer:

I wish to receive some information regarding a sick cow, she has been ailing for about 6 weeks, seems to be quite bloated all the time, first started when she was turned in the fields. Changed her ration, giving just third cutting of hay. Does not eat much nor drink, chews her cud but very little. She slobbers a little and has thrown up once or twice. Have given 8 ounces of Epsom salts at one treatment and 16 ounces at another, two ounces of castor oil with turpentine at another with no result. Will you please let us know as to the disease and what should be the treatment?

Yours Truly,

Iran McKnight.

Answered by Dr. H. J. Frederick.

It is probable from your description that the cow to which you refer has eaten something that has caused the trouble or that there is a derangement of some of the digestive organs. In the first place, I would recommend examining the mouth to find if there

are any affected or decayed teeth. It would be well to give a cow, having the symptoms you describe, about a pound and a half of epsom salts and an ounce of ginger. This should be given in one dose and should be followed up later, if necessary, with a quart of raw linseed oil and flaxseed gruel. This is given as a drench. Dilute it with water so that it will pour from a bottle. This could be given three or four times a day. It might be well to feed a cow ailing in this way with bran mash daily, the mash containing about one dram of NUX VOMICA and about two or three drams of GENTIAN. This could be continued for four or five days. See to it first, however, that the bloatings you describe is overcome with epsom salts, or you might use ammonium carbonate in two ounce doses drenching the animal with the same. Be careful in feeding that you do not use too much roughage, but see to it that the food is fairly well concentrated. I believe if this is carefully followed out that you will be able to combat the trouble.

FEEDING ROOTS

I. D. O'Donnell.

The feeding of sugar beets, mangels, carrots, turnips, and other succulent roots has never gained the favor in this country that it has in some European countries where great excellence has been secured in various types of farm animals. Our farmers have not felt that they need to furnish such feed to their live-stock and have favored feeds requiring less labor to produce and place before the stock. Of late years silage has been found to add the desired succulence to the live-stock ration. Where good silage is not available, however, farmers should not overlook the advantages of feeding roots.

The common run of roots contain from 70 to 90 per cent water, and the proportion of real food in roots is low when compared with alfalfa hay or grain, but the benefits from feeding roots are not so much in the food contents of the roots as in the effect they have on the balance of the ration and the favorable condition they effect on the organism of the animal.

Fed to dairy cows during the winter months roots increase the milk flow and assist in keeping the hard-working digestive organs in prime condition. Fed to sheep with a fattening ration the benefits are readily apparent as the dangers of constipation are obviated and a relish for the balance of the ration is maintained. Care should be exercised in feeding roots to horses, particularly horses being worked, as the laxative effect will be found objectionable. A few carrots each day, however, will be greatly enjoyed by the horse and good will result.

For hogs and cattle being fattened it is well to start the fattening period with a liberal supply of spar beets, mangels, or, possibly, turnips, as it will be found that better results will be had from the high-priced concentrates used in the latter part of the feeding period after the roots are to a great extent taken from the ration.

Experiments have shown that the flesh of animals fed heavily on roots is much softer than that of animals not receiving succulent feed, and on this account there is objection on the part of some people to feeding roots. It will be found, however, that if the feeding of roots is properly regulated as to quantity and gradually decreased as the feeding period advances there

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will be no objection to this feed account of making soft meat.

Because of the softening effect may have on the flesh of animals are particularly valuable when id

per amounts to brood sows, mares, es, and cows, as the pliable flesh ap-
es to be a condition favoring the
sy birth of lusty young animals.
Don't try to make a full ration out
roots alone; use them to supple-
ent the high-priced dry feeds.
Don't be misled by statistics show-
g that more fed units may be sacured
less cost by growing grain or for-
e than is possible by growing roots.
stated, the main benefit from feed-
g roots is the efficiency given to
er and high-priced feeds and the
od effects of succulent food on the
estive organs of the live-stock.
you are not in position to furnish
r stock with good silage you
uld plan to grow some roots to add
your feeding ratins next winter.

DEEP CLEAR WEEDS

AS WELL AS GOATS
Goats are excellent for clearing
shy land, but sheep are also good,
we have found during the last three
rs in running them in foul hill pas-
es. When our pastures were
ared some years ago of trees and
bes, there immediately sprung up
them millions of rank weeds and
outs. Among the worst of the wild
st was the iron weed, which our
le and horses would not touch.
sheep like iron weeds almost as
l, if not as well, as good grasses.
the end of the second summer our
sheep had almost completely cleaned
the pastures of this weed pest, and
the flock is not yet large in compar-
to the acres grazed.
f bushes and sprouts, sumac was
thickest and rankest in our new
ures. Old sheep like sumac leaves
the candy." A ram or a ewe will go
a sumac bush in full foliage and
completely defoliate it before leaving
the bush is not too large and the
sheep is not disturbed in its feeding.
his pasture pest, sumac, which we
posed years would be required to
licate, now scarcely a plant can be
old. They have been killed out
itally as dead as door nails. Goats
od not have done the job better.

plentiful supply of dry bedding
only makes it more comfortable
the animal to lie on, but in every
ee increases its comfort.

nder most circumstances the cow
uld be fed all the roughage that
h will eat up clean, adjusting the
n ration to the milk production.
when the cow tends to become
fat should the quantity of rough-
be restricted.

ake the dirt off the legs of horses
a rag or soft brush rather than
a curry comb.

is easy enough to add several
to the life of a horse by not
bing him while young.

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—also to points reached by the
Transportation Company via
rd, and to points on the O. S. L.
in Utah, via Salt Lake City.
dates December 16th, 19th, 20th,
22nd, 23rd, 24th, 25th, 30th and
1916 and January 1st, 1917. Good
taining until January 3rd, 1917. For
s and further particulars see
s Salt Lake Route. Wm. War-
A. G. P. A., Salt Lake City. adv.

POULTRY

REASON FOR SO FEW EGGS. Carl Hansen.

If you had a good sized flock of
hens all laying eggs you would be
making money. This year eggs are
higher than the average and many
of us would like to know the reasons
why we don't get more eggs. There
is a reason and each one must solve
his own problems.

Many flocks do little more than pay
for the feed they consume. Some, at
least, might be found a distinct loss
to their owners if charged up with
every item of expense. The problem
put before the poultry-keeper is to
find out the cause of non-success and
to adopt means to remedy it.

Of course, we all know that hens
are accustomed to take a rest at the
time of moulting, and this they must
be allowed to do. No effort should be
put forth to check or curtail moulting
operations, but the problem with most
of us is to get them started to work
directly after the moulting season is
over.

Spring and summer are the natural
laying seasons for the hens and con-
versely it may be said that fall and
winter offers the greatest inducements
in the way of larger prices since the
supply of eggs is not likely to keep
pace with the demand. Hence, we can
understand that early moulting, fol-
lowed by a resumption of egg-laying
continued right through fall and win-
ter will prove most profitable, other
things being equal. Good feeding
practiced directly the moulting season
is completed will tend to put the hens
in good shape so that laying is more
apt to commence before winter sets
in.

Overfeeding and underfeeding are
also powerful contributory causes to
failure in poultry keeping, especially
when the birds are in confinement.
The first of these is the commonest
complaint, and there are few who are
not offenders at one period or another
of their careers as poultry keepers.
Beginners, especially, are prone to be-
lieve that they can never feed their
hens too well, and the result is food
lying about the pens.

Mashes and green foods are liable
to become stale and sour in a very
short time, and in this condition are
not fit to feed to the flock. Overfeed-
ing on whole grain will tend to make
the hens lazy, overfat, and unfit for
their work. Should grain be left scat-
tered around the pens and runs it may
also become so foul that it brings on
an attack of cholera, which will soon
clear off the best of the flock.

Those who underfeed, as a rule, do
not actually starve their birds as re-
gards quantity of food, but the mix-
ture is poor in quality and deficient in
some necessary elements, so that the
feed is poorly balanced, and accord-
ingly will not give the best results.

Overcrowding is too common in
many flocks. Besides interfering with
the exercise and liberty of the hens it
is almost impossible to keep a flock
free from disease under these condi-
tions. It is certainly impossible to get
results in yield of eggs. So great are
the evil effects of overcrowding in
either house or yard, there is no doubt
that a small flock of ten hens in quar-
ters large enough for them will yield
far more eggs than if twice the num-
ber were kept, and the cost would be
only one-half for the smaller number.

Whatever the cause of non-success
with fowls it is always possible to rem-

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edy the condition. Usually it is the
comparatively simple things that do
the greatest harm, because they may
be entirely overlooked, while at the
same time we try to be wide-awake to
some of the greater and more appar-
ent hindrances.

KILLING AND DRESSING IMPORTANT IN MARKET- ING DRESSED POULTRY

Success in marketing dressed poul-
try depends very largely on the meth-
ods followed in killing and dressing.
Starving 24 hours previous to killing
empties the crop and intestines, im-
proves the keeping qualities, and
makes the fowl more attractive.

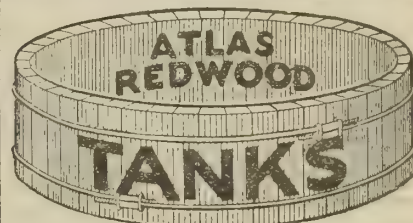
Bleeding.

Since a well-bled bird looks better
and keeps better, the kind of stick
necessary to make the bleeding suc-
cessful is very important. Hang the
bird about five feet from the ground.
Grasp the head in the left hand, comb
downward, with the forefinger, part
the bill. With the right hand insert
the sticking knife on the right side of
the mouth where the bones of the skull
and neck join. This servers a leading
artery and the bird will bleed freely.
The knife should be pointed and very
sharp, preferably, two inches long and
one-fourth of an inch wide.

Brain Stick.

If the fowls are dry picked, the
brain is necessary. As soon as the
artery has been severed, insert the
knife through the groove in the roof
of the mouth into the brain. This
paralyzes the bird and causes the
feathers to loosen.

The bird should not be allowed to
cool or the feathers to tighten, but
the picking should start at once. The
breast feathers are first picked, and
then the long tail and wing feathers.
—C. S. Anderson, Colorado Agricul-
tural College, Fort Collins, Colorado.



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this paper

Daynes-Beebe Music Co. SALT LAKE

TORRENS SYSTEM OF LAND REGISTRATION

(Continued from page 3)

barrister, and a conveyancer, who are styled, "examiners of title." These gentlemen report to the register (1) whether the description is clear and definite, (2) is the applicant in undisputed possession of the property, (3) does he appear in equity and justice rightfully entitled thereto, (4) does he produce such evidence of title as leads to the conclusion that no other person is in the position to succeed against him in an action of ejectment. If the applicant gets through successfully in this preliminary examination, notice is then served on all parties interested, either personally or by publication, and a certain time given for such parties to come forward and to contest the decision of this examination. If within the time limited by the notice any such party desires to contest the validity of the applicant's title he files what may be termed a caveat, (which under the common law meant a formal caution or warning not to do an act mentioned, and addressed to a ministerial or judicial officer of the government). The filing of the caveat suspends the operation of the examiners and the register, and takes the case immediately into the supreme court, where the rights of the parties are fully litigated and adjudicated. If no caveat is lodged, or if withdrawn, or if decided in favor of the applicant, the land is immediately brought under the operation of the act, and a certificate of title is issued vesting the estate indefeasibly in the applicant (by indefeasibly in law is meant that which cannot be defeated or enjoined). These certificates are in duplicate, one being delivered to the owner and the other retained by the register. They describe the land, referring to the official survey, map, and if necessary a diagram is attached to the certificate. They set forth the nature of the estate, whether in fee simple (complete ownership) or whether limited, and note on their face all interests or lesser estates, easements, liens, etc. In case of transfer thereafter, a deed, as under our present system, is made and delivered to the purchaser together with the certificate properly endorsed by the owner. The purchaser with these in his possession then proceeds to the registry office and has the land transferred to his own name on a new page of the register, and a new certificate is then issued to him, the old one being delivered up and destroyed. In case of transfer of a part only of the property the balance may remain on the old certificate with a memorandum appended thereto that a part has been sold, or the original owner may take out a new certificate, paying the small fee demanded, with the new description, while the purchaser of the property is entitled to a certificate for

the part purchased by him, and a new entry is thereupon made in the register. All mortgages, liens, charges, easements, etc., are entered in order on the register book and endorsed by the register on the certificate.

Upon the death of the owner the title is treated as personal property, and passes to the executor or administrator of the estate as is now the case with stocks and bonds. The executor or administrator must file with the register a certified copy of the probate court's order before he can transfer to the devisee or heir. All questions concerning heirship, downer, and rights of creditors are thus conclusively satisfied at the time, and do not continue to remain for years afterwards defects on the title.

The system, from this brief and hurried survey, seems simple and effective, and one wonders, on first study, why every state in the Union has not accepted it and put it into active force. It has met, however, with strenuous opposition, both from members of the bar, who, sincerely, or from interested and mercenary motives, oppose it; likewise from the powerful and moneyed title insurance companies throughout the country.

The lawyers' income, which some few years ago was greatly swelled by the examination of abstracts of title, has been largely cut into, if not almost entirely absorbed, so far as this source of revenue is concerned, by these title insurance companies, which, for a fee, pass upon the title to a piece of land and issue to the owner insurance on the same. Therefore, it can be said, without much overstatement, that the criticism of the lawyer is based upon a sincere belief in the wisdom of the present system and the lack of wisdom in changing. But one is lead to wonder the more he studies this particular plan and observes its operation where effective, as to whether or not our brethren of the bar (that is those who do oppose the system) do not oppose it mainly from the conscious or unconscious dread and horror of seeing the sanctity of the old common law forms invaded by innovation. It is far easier to understand and analyse the motives of the title insurance company, which does a tremendous business in the insuring of titles under our present system. The enactment of the Torrens system means the insuring of the title by the state, a much safer and more desirable insurer than any individual or company, and consequently putting out of business these interests which have fattened on the business of the title insurance. I do not argue, of course, for a moment that the Torrens or similar acts, are by any means perfect and entirely free from defects and criticism, I only believe that in comparison they are far superior to the cumbersome, expensive, and in many respect unsafe system of the present.

In another issue I may take up a few of the more vital objections and discuss them in what will have to be a very cursory manner.

IRRIGATORS' QUERIES ANSWERED

O. W. Isarelsen, Utah Agricultural College.

How can one determine what quantity of water should be added to a given soil in one irrigation?

The chief controlling factor of the depth of water which should be added to a soil in one irrigation is the depth of the soil itself. Many experiments have been made to determine the amount of water which a given depth of soil will absorb and retain. It may

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be said that in general, one foot of soil will not retain more than one inch of irrigation water, consequently, if by using a soil auger one finds that the upper three or four feet of his soil is dry, it may be safely said that three or four inches of water will be sufficient to penetrate this soil to the given depth. To be sure, this cannot apply without limitations, to all types of soil, since some soils will absorb and retain more water than others. For example, a sandy soil may retain only 1/2 or even as little as 1/4 of an inch of water per foot of soil, where-

as some clay soils have been found to retain about 1 1/2 to 2 inches water per foot of soil.

And again, one important consideration in attempting to base the quantity of water applied upon borings in the soil to ascertain the depth which needs moistening, is the matter of letting the water applied uniformly over the entire surface. In other words, it is not adequate to apply two inches over certain parts of the field and only one inch over certain other parts.

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UTILIZING WASTE TIME

The problem of waste time is a serious one on most farms. Rainy weather means losing the farmer's time and that of his hired men, while during the winter and other slack seasons this loss is even heavier. Every farmer should have a list prepared in advance of profitable ways to employ waste time.

Preparedness is as important for the farmer as it is for the soldier. The farmer who wins is the farmer who keeps up with or ahead of the game, who utilizes rainy days and slack seasons to get his affairs in such shape as to enable him to meet the demands of his busy seasons without strain or confusion.

For example, when it is too showery or too muddy to work to advantage in the fields, weeds can be mowed with a mower or scythe; fences can be repaired or built; tools can be overhauled, repaired, or sharpened; buildings can be repaired, hedges can be trimmed or pulled out; bushes can be grubbed from meadows and pastures or along fence rows. The farm garden

often can be worked when the weather will not permit field work, and stock farmers frequently can haul hay and straw from the field between showers.

Even the winter season can be made highly profitable if intelligently employed. Stock farmers have a supply of regular work during that season, but they and all other farmers should recognize the possibilities of the winter months as a season of preparation for the rush of work in the spring.

Manure should be hauled out in the winter whenever the weather permits. Farm machinery should be greased or oiled when put away and then carefully gone over during the winter months and thoroughly repaired. Edged tools should be sharpened, harness repaired and greased, extra whipple trees made, and buildings repaired. Fence posts can be cut, and firewood for the year laid in and chopped ready for use. During the winter months needed wells or cisterns should be dug, seed corn should be tested, and small grains should be cleaned and tested.

Moreover, every farmer should lay out for himself, or get the county agent or the state agricultural college to lay out for him, a course of reading from agricultural bulletins for the winter months.

Every farmer should try to acquire each winter a thorough knowledge of some new crop, or of some new scientific agricultural method. One winter alfalfa could be taken up, the next soy beans, the next pigs, etc. In addition to this, when possible, the farmer should attend, or send his boys to the short course at the state agricultural college.—Carl Vrooman.

The farmer who regretfully says, "A poor crop this year! Oh, well, a better one next year!" may be a bit of a philosopher, but he is not much of a farmer unless he gets busy and tries to find out why the "poor crop this year" and what he must do to avoid such a result under similar or worse conditions in the future.

Lots of men do not realize the loss of the money they might have, but never get hold of. If they did, there would not be so many neglected orchards and farms in these United States.

There is as much difference in the water requirements of various crops as there is between different kinds of live-stock. Don't try to make a water lily out of a sugar beet.

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State Farm Bureau Committee Makes Report

After a conference with sugar officials, the committees appointed by the Utah State Farm Bureau to confer with them in regard to prices of sugar beets and other concessions that the farmers wanted the companies to make, have submitted a report which we give below.

Judging from the expressions made by a number of farmers the recommendations of the committee will be accepted by them.

The only way that the sugar beet industry can prosper is by both sides co-operating to bring about better conditions for all concerned.

Committee Report.

"To the farmers and beet growers of Utah: As a result of your committee's negotiations with the officials of the various sugar companies operating in Utah and Idaho, we herewith submit through the press our report and recommendations.

"Throughout the negotiations have been characterized by a spirit of co-operation. In fairness to the sugar officials, your committee must say that they have been open-minded and have met us half way on every request we have made.

"In the matter of price of beets, we have been given the option of accepting a flat rate contract or a sliding scale contract. After sounding the sentiment of the farmers we recommend that, for this year, the farmers accept the \$7 flat rate contract with a view in future of working out a system of co-operation with the chemical department, whereby a sliding scale can be made effective and satisfactory to the beet growers.

"We discover that the sugar companies are now exerting every effort to better the unloading facilities. Transportation by auto truck is now being tried on a small scale and promises to enlarge in future. Lumber and machinery for several new dumps have been ordered and will be installed in the near future. The officials assure us that it is their desire to meet any reasonable request of the farmers in bettering conditions that now prevail.

"The sugar companies have conceded to the growers in their 1917 contracts the privilege of starting to dig beets five days earlier than customary in years past. They recognize, as do the farmers, the urgent necessity of getting the beets out of the ground as early as possible after the beets have matured.

"With reference to pulp, the companies promise to give the growers first consideration in its purchase. They are anxious to get the farmers to feed the pulp to stock on their farms in order to keep up the soil fertility. They refuse to allow a price of 25 cents per ton in view of the fact that all stock feed material has increased in price during the past two years, and to the further fact that a very material advance in price is being made to the farmers for beets. They assure us of a reasonable price. It is the desire of the sugar people to so educate the farmers that eventually they will consume the entire pulp output of the factories. As fast as existing contracts with feeding companies expire, growers will be privileged to contract for additional pulp. We recommend, therefore, that early in the season, through their various county bureaus, farmers make written request for the pulp they wish to

purchase and that they contract for same in a body.

Ask for Co-operation.

"The sugar companies are desirous of securing the co-operation for which we ask. If you have local men upon whom you can decide for field men and weighmasters, make this fact known through your local and county bureaus, by appropriate resolutions. Send such resolutions to the sugar people and they will receive due consideration.

"As a specific means of securing a closer co-operation, not only with the sugar people, but all commercial organizations handling farm products, we recommend that the state farm bureau adopt some official organ through which all questions of interest to farmers may be freely and frankly discussed. We feel confident that the commercial men will welcome such an organ and give it substantial support.

"We recommend finally that meetings be called by the presidents of each county farm bureau and that

official action be taken accepting or rejecting this report, and that county secretaries be instructed to communicate with State Secretary Howard V. Alston, Riverton, Utah, the results of such, with reasons therefor. Respectfully submitted, Beet-Committee, Utah State Farm Bureau. By W. J. Charwick, Chairman."

JUDGE GARY'S RECIPE

FOR SUCCESS

In the January American Magazine Judge Gary gives his recipe for success. He says about a young man:

"1. He should be honest, truthful, sincere and serious.

"2. He should believe in and preach and practice the Golden Rule.

"3. He should be strong and healthy, physically and morally.

"4. His habits and mode of living should be temperate and clean and his companions selected with regard to their character and reputation.

"5. He should possess good natural ability and a determination constantly

to improve his mind and memory.

"6. He should possess a good education, including particularly the fundamentals, such as mathematics, grammar, spelling, writing, geography and history; and also a technical education concerning the line he proposes to follow.

"7. He should be studious and thoughtful, keeping his mind upon subject until it is mastered.

"8. He should be conscientious, modest but courageous, energetic, persistent, even-tempered, economical, faithful and loyal to his friends and the interests he represents."

The cities may have their little mobs and riots, but the farmers will plow and sow and reap and feed the stock, and go forth to their labors until the evening. The farmers have ever and always been the hope of the world.—Elbert Hubbard.

As a rule, the men who are willing to pay the best prices for the horses they purchase want them well trained

"Civilization begins and ends with the plow."

—Roberts.

The Utah Agricultural College

EXTENSION DIVISION

Announces Farmers' Round-ups and Housekeepers' Conferences as follows:

JANUARY 9 TO 17.....SALINA

JANUARY 22 TO 27.....OGDEN

and JANUARY 29 TO FEBRUARY 3.....LOGAN

FEBRUARY 7 TO 15.....CEDAR CITY

Special emphasis at these Conventions will be placed upon such subjects as, The Business Side of Farming, Marketing of Farm Products, Veterinary Practice, Nutrition of Children, Relation between Food and Health, Electricity in the Home, Mothercraft.

For complete information address: The Director, Extension Division, Logan, Utah

Second Semester at the College Commences January 30, 1917

Address inquiries to the President, Utah Agricultural College, Logan, Utah.

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JAN 13 1917

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 23-24 LEHI AND SALT LAKE CITY, UTAH JANUARY 6-13, 1917

Wellsville Cow Testing Association

By LeRoy W. Hillam.

Grade Jersey Cow Breaks State Record for Butter Fat Production.

Having just completed its fourth month's work the Wellsville Cow Testing Association now claims the state record for one month's butter fat production for a grade cow. Mr. John Darley's grade Jersey cow "Jersey" has just finished the second month of her fourth lactation period with a production of 76.2 pounds of butter fat for the month. This cow is five year old and is at her best at the present time. Her production of 1693 pounds of milk testing 4.5 per cent. milk was made on alfalfa hay and wet beet pulp with no grain of any kind.

Closely allied with this record is that of her mother "Star" also owned by Mr. Darley. This eight year old three-fourth Shorthorn and one-fourth Jersey cow produced 1634 pounds of milk testing 4.1 per cent, giving her a month's record of 67.0 pounds of butter fat. Following close to these records comes Mr. John Stuart's five year old grade Holstein "Blackie". With a production of 1624 pounds of milk testing 3.9 per cent producing 63.3 pounds of butter fat for the month.

This high herd record for the month was made by Mr. John Green, three Jerseys the rest of his herd being grade. These three cows only one of which is fresh averaged 45.5 pounds of butter fat per cow. Mr. LeRoy L. Green's mixed herd of four was second with an average of 41.3 pounds of fat per cow. Mr. John Darley's 14 Jerseys take third place with an average of 35.0 pounds of butter fat.

This month thirty-four cows are on the "Honor Roll" each having produced over forty pounds of butter fat for the month. Of these thirty-four cows 1 of them produced over 50 pounds of fat, 3 over 60 pounds and one over 70 pounds of fat for the month. A very remarkable test is that of the 8 cows on test during the month 88 of them produced 30 pounds of fat. Twenty-five of the cows on test made over 1000 pounds of milk for the month.

The association average this month is 25.23 pounds of butter fat per cow. This is 3 pounds higher than average of any previous month. Increase is due to better methods of care and management, and better

system of feeding whereby the cows are getting a larger variety of feed and a more balanced ration than alfalfa alone will give. The average of the ten highest herds, a total of 75 cows, was 33.47 pounds of fat per cow, 8.24 pounds higher than that of the whole association. The average per cow of the ten poorest herds, a total of 80 cows, was 18.81 pounds of fat, 6.42 pounds per cow less than the association average and 14.66 pounds per cow less than the average cow of the ten best herds.

This month five more "boarders" were disposed of as beef. Due to the high price of feed this winter the "dead line" is quite broad and as a result a cow must be up and at it all the time if she intends to make a profitable showing for her owner, otherwise she will soon be disposed of.

Due to high prices and the scarcity

Don't Sell Your Stock Hogs Now

Alex Lofgren.

I have had some experience that others may profit by if they desire. It is a mistake to sell out your stock hogs when grain and other feeds go up. To make money in the hog business you must stay in it all the time. Stay in when the price is high or low and in the long run you will make money. You will remember the experience of the sheep men two or three years ago. They sold their herds and lost money. Now they can not get back into the business because it takes too much money, but what about the fellow who stayed with the sheep business—he is reaping

ing pays far above any other kind.

Mr. Thomas Bradshaw has sold some of his grade cows and has replaced them with three 2-year old pure bred Holstein heifers. He has

ing a harvest; now don't be a bit surprised if the same thing is repeated in the hog business.

I do not advise people to hold their fat stock, sell this when the market is right and your stock is ready. Hold your stock hogs even if the price of grain is high, if you sell them to some one else they expect to feed them and make money why don't you do it yourself.

If grain and other feed is high the price of hogs will be high, it must come because people will not give their grain away. But why can't you feed the stock hogs and make money if the other fellow can do it? The prospects are that grain will bring a fair price and may be much lower than at present if the war should be stopped. If Russia could ship out her grain to the Allies it would "break" the price and grain would be less. On the other hand live-stock prices will not come down for the same reason.

In case of grain going down, which it will do when peace is in sight, I expect hogs to remain at a good price, because all these countries will want meat, and they will have to get it from this country, or some other meat producing countries.

Now if we farmers sell our stock hogs what will be the results? You will want to get back in the business but the prices, as it was with the sheepmen will be too high. You will think you could not make money and the result will be you will be out of the hog business. What is true with the hog may be equally true with all kinds of live-stock.

What we need in this country is more live-stock. There is no other animal that will respond to careful intelligent care and feeding like the hog. Any fellow who sells his stock hogs at this stage of the game will make a mistake.

If your neighbor wants to sell out buy his hogs and the prospects are you will make money even at the present price of feed.

Salesman—Madam, I have here one of the best cream separators ever made.

Mrs. Cornsback—Well, if you've got a machine that'll separate the price from my husband I'll take it.—Ex.



Good dairy cows are a profitable investment on any farm.

of feed many cows are not having a fair show. The average herd of the association is getting beet pulp and alfalfa hay, while some cows are fed on beet pulp, straw and a little hay. At present very little grain is being fed but it could be used to a very good advantage in replacing hay. One pound of rolled barley or oats will replace two pounds of alfalfa or clover hay and at the same time will produce better results and prolong the heavy milking period of the animal. With high feed prices and butter fat at 48 cents per pound we cannot afford to get anything less than the maximum milk yield from our cows this winter. We are learning more and more each day that winter dairy-

just purchased a 3 year old registered Holstein bull to place at the head of his herd. All of these animals are of excellent breeding and their posterity will amply repay for them within a short time.

During the month the milk producers of Hyrum had a "silo" meeting. They were lectured to and instructed by Pres. Hendricks of the Utah Condensed Milk Co. As a result it is almost assured that four members of our association, the Gem Jersey Farm, Albert Savage, D. C. Nielson and P. L. Peterson will build silos in the spring. These men are going to be assured that they have ample feed of the best kind for next year and are going after results in the right way.

A Warning

Certain preparations are advertised and offered to housewives for use in dry-cleaning garments. "Dry" cleaning usually involves the use of gasoline with the preparation instead of water. Now we have no means of knowing the merits of any of the compounds thus offered for sale, but those which require the use of gasoline in any quantities should not be used indoors nor outdoors where there is any danger that the fumes of the gasoline will come in contact with fire. Gasoline, held in terror a few years ago when gasoline stoves were about the only means of using it, with the coming of the automobile has acquired wide use. It has not lost any of its inflammable or explosive qualities, however, and it is today one of the most dangerous articles in common use.

It may be the height of folly for a man to play with matches in a powder magazine, but a powder magazine in connection with fire is no more dangerous articles in common use.

It may be the height of folly for a man to play with matches in a powder magazine in connection with fire is no more dangerous than a gasoline can in the same connection. Fire insurance companies in issuing policies of insurance place restrictions upon the quantity of gasoline which may be kept about the premises of the insured, and a proviso in many cases that the insured warrants that gasoline will not be used in any house where there is a fire in a stove or an artificial light. Notwithstanding these provisions, dictated by experience and prudent regard for the welfare of the insured, and notwithstanding numerous deaths as a result of the careless use of gasoline, the innocent looking fluid is likely to be handled with such carelessness as to merit the description criminal.

Housewives who wish to try any new dry-cleaning preparations should be more than careful as to the time and place of using them, if gasoline enters into their composition. It might be even desirable to compel the advertisers or peddlers of such preparations to notify all buyers of the extremely hazardous risk they take with gasoline if they use it indoors. Even the slightest knowledge of the nature of gasoline is sufficient to warn the user that it is not necessary for fire to come in contact with the fluid to cause an explosion, but that the fumes are highly explosive.—Exchange.

BLANCHING CELERY

There are many different ways to blanch celery. The following have been found to be the most practical:

Trench Method.

When the young plants are set out, they are placed in a trench 6 to 8 inches deep. As they grow, the dirt is gradually worked in around them, care being taken not to cover the leaves.

Banking Method.

Earth of clean straw can be used for this. When the plants get fairly large, the dirt between the rows can be pulled up around the stalks, or straw can be made to serve the same purpose. Do not use manure, as it is apt to ferment and injure the stalk.

Boards.

Six to eight-inch boards are often used. They are placed one on each side of the row, and as near the plants as possible. Boards have the advantage

over the other method in that they are easy to place when needed, and can be removed and stored until the next year.

Wrapping Paper.

Strong manila wrapping-paper can be used. Each individual plant is wrapped. This is a slow method, but keeps the stalks clean.

Tile.

Four-inch drainage tile is sometimes used. The tile is simply slipped over the plant when it is 7 to 10 inches high. The tile stands in an upright position and affords good protection to the stalks. This method is not as expensive as it may sound because the tile can be used for many years for the purpose.—E. F. McKune, Colorado A. C.

DUST PREVENTION

Dust is one of the nuisances of a traveller and to the one living near the

road. In many places the roads are oiled but this is expensive. The road drag is a good dust prevention, and the cost of using it is small. Much of the dust in a road comes from the wearing down of ruts and the ruts were formed in the road because water stood in it. The road bed that is well crowned in the middle and packed hard will not loosen up much in wet weather and if no ruts are formed there will not be much material to form dust. The best implement for crowning the road bed is the road drag. It should be run over the road after every rain. In this way the soil is laid on the road bed in thin layers and is packed on.

When the road bed is hard and crowned in the center it will hold just about the right amount of moisture unless it is sandy. Grass and weeds growing along the road bed send their roots under it and thus remove the

moisture that holds the soil grains together. The weeds and grass should not be allowed to get within several feet of the travelled part of the road.

Clay or loam will pack hard when it contains the right amount of moisture, when too wet it becomes soft and when too dry the soil grains do not stick together. The best way to keep a fair amount of moisture in the road bed is to keep it at least 18 inches above standing water. To keep it packed hard and well crowned in the middle and to keep a strip on each side free from weeds. When ruts are allowed to form they will be ground to dust as soon as drying weather sets in. Use the road drag to keep ruts from forming.—W. C. Palmer, North Dakota Experiment Station.

Watch waste about your farm. Next time you go to the barn look around with this thought in mind.



One of the New Concrete Roads of Vermilion County, Ill.

Farmers Paid County Road Tax—Didn't Know It Was In The Bill

Many farmers in Vermilion County, Ill., paid their "hard roads" tax last spring and didn't even notice that it had been included in their regular assessment.

Vermilion County is building 167 miles of improved roads, of which 144 miles are concrete, at a cost of a million and a half dollars. The tax rate for the bonds is 2.85 mills. This is almost twice the rate for the proposed road in Utah County, and yet the farmers didn't know they had paid it.

Why Concrete Roads Are Selected

Concrete Roads are selected because of the great degree of satisfaction derived from those already in use. They provide roads that are 100 per cent efficient in that they are free from dust, mud, ruts, holes, slipperiness and skidding. They reduce the cost of hauling produce and are open for travel 365 days in the year. Above all concrete roads are the most economical.

A concrete road from the north to the south boundaries of Utah County would provide all these advantages and more. It would link together every important town. It would be the backbone of the county road system. It would make Utah County a model for every county in the state to follow.

Let us send you the facts. Write for a free copy of Bulletin No. 136, entitled "Concrete Facts About Concrete Roads." Prove for yourself that concrete is what you want. Then tell your road officials your opinion.

PORTLAND CEMENT ASSOCIATION

111 West Washington Street, Chicago

Utah Representative, W. F. Long, 907 Kearns Building, Salt Lake City.

CONCRETE FOR PERMANENCE

Dry-Farming An Important Agricultural Asset

By J. W. Paxman, Specialist in Dry-Farming for the Utah Agricultural College.

Dry-farming for some years past has at steady pace with her sister companion—irrigation—in the agricultural development of the state and is at present firmly established and recognized as a permanent and successful system of agriculture. There is more need of failure in dry-lands when the approved methods are used, then there is in the crops under irrigation. To those who would engage in dry-farming is given two charges—that of carefully seeing the soil and the conservation of sufficient moisture to meet the requirements of the crops; the latter being the underlying principle that provides for a sure and safe foundation upon which rests all our hopes of future success.

The practice of this principle involves the putting into use such methods that make for fertility, that provides for the necessary food for plants and that furnishes a whole, roomy and sanitary home for plants. In other words, the method employed for the proper conservation of moisture and its utilization in the crops, insures the ideal seed so essential for the vigor and life of the growing plants, and gives to them a strong resistance to adverse conditions, and likewise insures their producing powers.

The intelligent dry-farmer as he progresses with his work, understands more and more that the moisture held in the soil and held there by proper methods of control, has a most powerful power; for it is virtually accumulating wealth from day to day by absorbing and holding in solution the material necessary for the building of plants—the food upon which they go to subsist. Thus, this moisture duty, as it should in the soil, is accumulating wealth and is not unlike a reserve in a bank—it guarantees safety and provides against any threatening calamity; it is the sure guard against failure and a veritable bulwark of power in seasons of stress, and also insures at harvest a triumphant success.

A Rich Supply.

Asteupendous supply of wealth comes to us year by year by means of the snows and rains and it but remains for him who would succeed to secure such lands that will be retentive of the moisture and to put into practice the methods that are definitely known will control this stored moisture. Those who best know the natural possibilities of the state also know that Utah's agricultural wealth lies in the economic use of the moisture whether the liquid fluid is retained in the form of snows and rains or applied by the artificial means of irrigation. So then, the reception of

all available waters into the proper soils, and their economic use is without doubt the greatest factor for man to control in the production of crops. It thus behooves the husbandman to become acquainted with the elements which make for success and to practice them scrupulously in his farm life—laying a sure and safe foundation for his hopes of success. The

desire it; to pass judgement on lands as to their possibilities for utilization in dry-farming, to advise on equipment, methods of operation, crops to grow, selection of seed, planting and harvesting; and to counsel on all vital subjects pertaining to successful dry-farming. His office is at Nephi and all letters of inquiry and requests for assistance will receive proper attention.

fluences for moisture are particularly good. The desert lands also, with loose, open, porous soils should not be selected. Shallow soils that are underlaid with gravel or coarse sand are not suitable for the reason that they do not provide a reservoir for the storage of moisture.

The homesteader should select the lands that are known to be reasonably fertile, where the top soil is light enough to work easily and fine enough in texture for a depth of 8 to 12 feet, so as to be capable of retaining all the moisture nature might give.

A Safe Guide For Selection.

One of the best indicators of good dry-farm lands is the natural vegetation found upon them. The native sage-brush intermixed with grasses is usually indicative of good soil; and where these grow prolific, there need be no further question as to the adaptability of such lands for dry-farm purposes. The good thrifty sage in Utah is invariably a symbol of fertility and provides a safe guide to the locator.

Reports as to where such lands may be found and the conditions which prevail in the various dry-farm districts in the state may be had on application at the office of the Specialist.

Crops Grown.

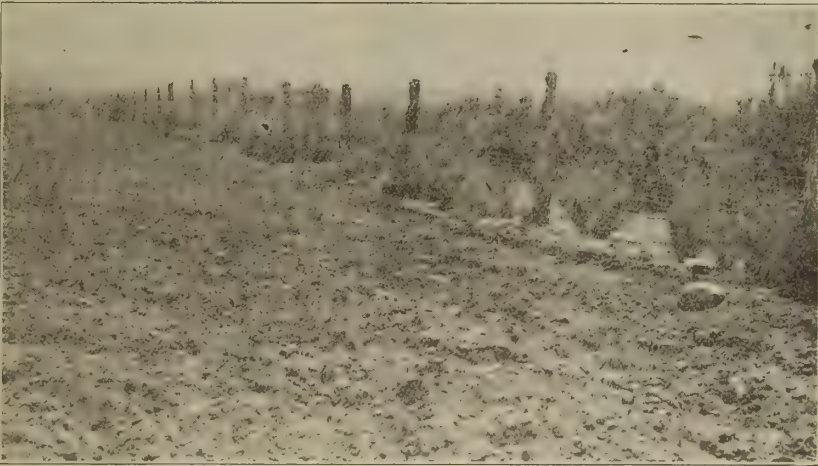
Wheat has been, and perhaps will be for all time to come, the most important crop on our dry-farms. As the agriculture of the state develops, less and less wheat will be grown under irrigation, because the production per acre of the more intensive crops will preclude the growing of this crop and in time transfer almost the entire wheat crop to the dry-farms, where it logically belongs, since wheat under average conditions on the dry-farms can be best handled with extensive farming and yield the surest and best profits. However, many other very profitable crops are grown on the dry-farms, adding very materially to the agricultural resources of the state.

Some surprising results have been obtained during the last two years, where the parties have given proper attention to the details in the production of the crops.

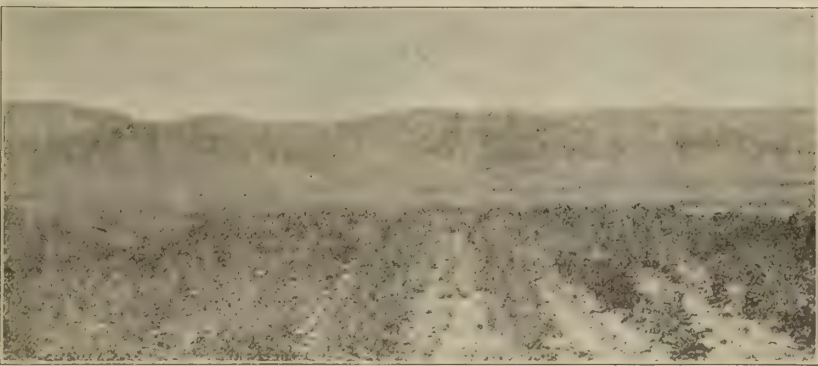
Here are a few of them, with the names and addresses of the parties producing them, and who, I am sure will be glad to verify what is reported:

- D. B. Broadhead, Nephi, 55 bushel Turkey Red wheat per acre; Isaac H. Grace, Nephi, 52 bushel Turkey Red Wheat per acre; J. W. Paxman, Nephi, 67 bushel Turkey Red Wheat per acre; Bishop Henry Wood Monticello, San Juan County, 55 bushels Turkey Red Wheat; D. B.

(Continued on page 7)



Sage brush of the type that indicates good dry-farm land.



Dry-farm potatoes with rows wide apart to help in saving moisture.

older farmers have learned this valuable lesson—some of the newer ones have yet to learn it; but suffice it to say, the system of dry-farming is well rounded out in this state, its foundations well and substantially laid and its practices and methods firmly fixed and intelligently presented, so that none need fail for want of information.

Assistance Rendered.

The Agricultural College has constantly employed a Specialist whose duty it is to promote all dry-farm interests in the state, to give direction and needful assistance to those who

tion. Besides the Specialist there are County Agricultural Agents in many of the counties who will be glad to render all needful assistance.

Lands Adapted for Dry-farming.

There are yet available for entry under the homestead laws hundreds of thousands of acres of lands suitable for dry-farming; but care should be exercised in their selection. Soils that are particularly heavy and dead, generally known as shad scale lands, and the still heavier clay soils, known as the greasewood lands, should be avoided unless the climatic conditions overhead, or the subterranean in-

Dairying

FEED BALANCED RATION.

Profitable feeding of dairy cows consists of supplementing roughages with proper grain mixtures. The feeding of dairy cow should be governed by the cow's capacity to produce milk. By keeping a daily record of each cow's production the skillful feeder soon finds that some cows in the herd respond to an increased allowance of feed and return a good profit on it, while others are limited in milk capacity and overfeeding them is unprofitable. Profitable feeding requires a thorough knowledge of the individual cows as well as of the values of feeds.

The following general rules are given as a guide for winter feeding by the inexperienced feeder:

1. Under most circumstances the cow should be fed all the roughage that she will eat up clean, adjusting the grain ration to the milk production. Only when the cow tends to become overfat should the quantity of roughage be restricted.

2. A grain mixture should be fed in the proportion of 1 pound to each 3 pints or pounds of milk produced daily by the cow, except in the case of a cow producing a flow of 40 pounds or more, when the ration can be 1 pound to each $3\frac{1}{2}$ or 4 pounds of milk. An even better rule is 1 pound of grain each day for every pound of butter fat produced by the cow during the week.

3. Feed all the cow will respond to in milk production. When she begins to put on flesh cut down the grain.

For the most profitable milk production, the cow must be fed a balanced ration at the cheapest price such ration can be provided. By balanced ration is meant the combination of such a proportion of nutrients and in such quantities as the cow requires to maintain her bodily functions and as she can utilize in the production of milk. These nutrients are classified as protein, carbohydrates, and fats. Protein is one of the principal constituents of milk; fats and carbohydrates perform much the same functions, that is, produce energy and heat, and in the balancing of a ration are usually classed together. If the cow is given a ration containing an excess of either element, the excess is liable to be wasted; hence the economical importance of a balanced ration.

While money is plentiful is a good time to save.

Crops may not always be so good, metals so high and business so active. Put some money away in a savings account NOW.

**Walker Brothers
Bankers**

SALT LAKE CITY.



Corn silage, corn stover, timothy hay, millet hay, prairie hay, hays from the common grasses, straws of the various cereals, and cottonseed hulls may be classed as low in protein content, while legume hays, such as alfalfa, the clovers, cowpeas, soy beans, and oat and pea, are classed as roughage high in protein. Grain and concentrated feeds are the chief sources of protein, and the mixture should be made to fit the class in which the roughage belongs.

Compounding a Grain Mixture.

A few simple rules for making up a grain mixture are given briefly below:

1. Make up the mixture to fit the roughage available. With roughage entirely of the low-protein class the grain should contain approximately from 18 to 22 per cent of protein, while with exclusively high-protein roughage the grain ration need contain only about 13 to 16 per cent.

2. Select grains that will furnish the various constituents, especially protein, at the least cost, using home-grown grains if possible.

3. Be sure that the mixture is light and bulky.

4. The mixture should be palatable.

5. See that the grain has the proper physiological effect upon the cow.

All these suggestions should be kept in mind in order to obtain the best possible combination of grains. The following table shows the digestible protein content of the more common grains and by-products feeds. The percentage columns are arranged in 5 per cent divisions.

Approximate digestible protein content of various grains and by products.

Average, 5 per cent (2.5 to 7.4 per cent).	Average, 10 per cent (7.5 to 12.4 per cent).
Corn meal. Corn-and-cob meal. Hominy feed. Dried beet pulp.	Oats, ground. Wheat, ground. Barley, ground. Rye, ground. Buckwheat, ground. Sorghum grains, ground.
Average, 15 per cent (12.5 to 17.4 per cent).	Average, 20 per cent (17.5 to 22.4 per cent).
Wheat bran. Wheat middlings. Dried distillers' grains (rye).	Gluten feed. Malt sprouts. Dried brewers' grains. Dried distillers' grains (corn). Coconut meal. Peanut meal with hulls. Cowpeas.
Average, 25 per cent (22.5 to 27.4 per cent).	Average, 30 per cent (27.5 to 32.4 per cent).
Buckwheat middlings.	Gluten meal. Linseed meal (both processes). Soy beans.
Average, 35 per cent (32.5 to 37.4 per cent).	Average, 40 per cent (37.5 to 42.4 per cent).
Cottonseed meal.	Peanut meal (hulled nuts).

The percentage of protein in a grain mixture may be found as follows: Take any number of parts of any number of feeds in the table, and for each part put down the percentage of the column in which it is found. Add these numbers and divide the sum by the number of parts.

Examples.

1 part wheat bran.....	15
1 part cottonseed meal.....	35



Vega Cream Separator

Clean skimming of quality promised. Easily cleaned—sanitary. Light turning, simplicity durability, low cost of upkeep.

A demonstration will convince you. A trial will satisfy you. A few months use will pay you.

SIZES

Model E, capacity 150 lbs.

Model F, capacity 300 lbs.

Model G, capacity 450 lbs.

Model L, capacity 600 lbs.

Model M, capacity 900 lbs.

A careful examination and test of the VEGA will convince you that it is the most perfect separator of today, and the biggest value ever offered in a separator.

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Call, write or Phone for latest catalogue.
CONSOLIDATED WAGON & MACHINE CO.

A GUERNSEY BULL

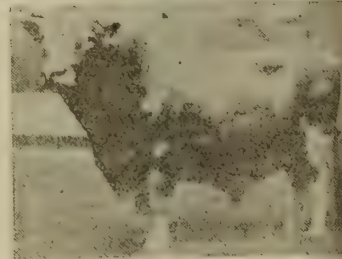
in a grade herd in Minnesota increased its production 24%.

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It has that wonderful natural yellow color.

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Prompt action and fair treatment if you do business with us.

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WALKER BANK BUILDING
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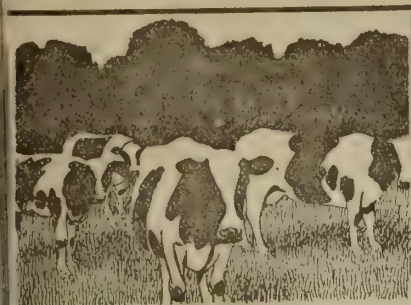
The Book of Dairy Books

It's the book, because it's the authority on the breed—the beautiful, ever-paying Jersey.

This book, "About Jersey Cattle," goes way back to the beginning of the breed shows how it was line bred and protected from mixture by law, and shows why has developed into the most economical and most persistent milking of all breeds. It gives tests, yields, etc., proving that the Jersey is the money cow—the "Giant of the Dairy."

The book is free but worth a lot. Send a postal for your copy today.

The American Jersey Cattle Club
389 West 23rd Street, New York C



Feeding That Pays

The experienced dairyman does not figure that feed is merely a means of keeping cows alive. He knows that certain kinds of feed adds nature in producing a bigger flow of milk. This means bigger profits to him. Health of cows and better returns therefrom are considerations in the manufacture of—

SUN-RIPE
Stock Feed

This feed produces results. It's helping the owners of cows to make bigger profits. It's a highly nutritious and properly balanced ration. Ask about it. Try it. Send for our booklet "feeding for Results." It's free.



Utah Cereal Food Co.
Ogden, Utah

1 part gluten feed.....	20
3	3)70
Per cent protein, 23.3	
3 parts wheat brain (3x15).....	45
2 parts cottonseed meal (2x35).....	70
1 part gluten feed (1x20).....	20
6	6)135

Per cent protein, 22.5
The approximate price of a ration per pound of protein may be ascertained as follows: Divide the total price of the mixture by the average protein content as derived above. The mixture costing the smallest price per pound of protein, other things being equal, is the most economical. Unfortunately, other things are never exactly equal, for the physiological effect of the grain, bulk, and palatability must also be taken into consideration. Practically all the grain feeds low in protein are rich in carbohydrates, but grains are used primarily for their protein content, as almost invariably the carbohydrates can be produced more cheaply in the form of corn silage, cornstalks, etc. While the above-mentioned method of testing the economy of a grain ration is not entirely accurate, it is usually a safe method to follow.

AGRICULTURAL NEWS

The Secretary of Agriculture has approved the allotment of funds for the second year under Section 8 of the Federal Aid Road Act.

Under this section of the law, the sum of \$10,000,000 is appropriated, to be expended in ten yearly installments, in co-operation with the States and Counties, for the construction and maintenance of roads and trails within or partly within the National Forests.

Under the allotment for the Fiscal Year beginning July 1, 1917, Idaho receives \$108,730; Utah \$41,167, and Nevada \$19,296. These amounts are practically equal to those allotted to these States during the present Fiscal Year.

A movement was started last week at Brigham City by Fred Merrill of the De Laval Separator Company, County Agent Robert Stewart and Walter J. Glenn, County Leader in Boys' and Girls' Club work, to organize calf clubs throughout the county. The clubs will consist of 40 boys. The calves to be furnished by the local banks or other commercial interests. A meeting was held with business people, school officers and plans were made to go right ahead and put several car loads of calves in the county this spring.

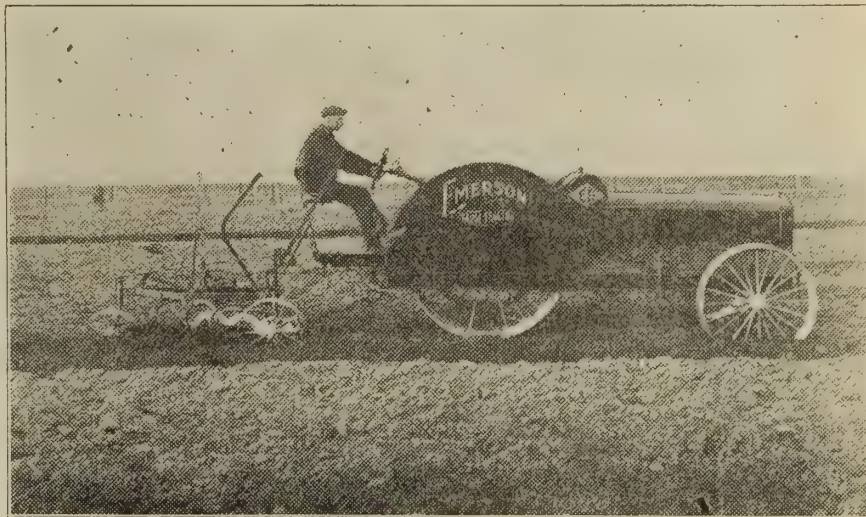
Mr. Merrill gave a talk at the High School to the boys and outlined the work of the calf clubs.

Farmers' account books can be obtained from the Extension Division of the Agricultural College, free if one will ask for it. The Utah Bankers Association is helping to share the cost of sending out these books. The books were made under the direction of Prof. Mark Green, who has had a special training in farm accounts. The book is so arranged that the farmer can easily keep a record of his business. The College will work with the farmer who secures one of these books and help him with his accounts.

The farmers of the state should avail themselves of this excellent opportunity of obtaining a Utah Farmers

Emerson Farm Tractor

MODEL L.



The Emerson Model L 12-20 H. P.

AN ideal Tractor for small or large farms. Light weight —4 Cylinders—2 Speeds. Suitable for a wide range of service. Adaptable to practically all soil conditions.

Will pull the implements you now have on the farm, such as gang plows, harrows, mowers, binders, manure spreaders, wagons, drags and small road graders.

A neat, compact Tractor with all working parts perfectly lubricated, thoroughly protected from dust, and easily accessible.

MILLER-CAHOON COMPANY

Murray, Utah

Idaho Falls, Idaho

Account Book and securing the services of the Agricultural College in a study of the management of the farm.

A start has been made to organize a cow testing association in Utah County. Ben R. Eldredge met with the farmers of Vineyard the other night and gave them a talk on the value of a cow testing association. Judging by the interest that was expressed by these cow owners, there will be something doing to help the dairy business in Utah County.

SOLD THE COW!

Bill Nye, the humorist, once had a cow he wanted to sell and he unblushingly advertised all her faults while naming the few virtues she seems to have possessed. His advertisement ran:

"Owing to my ill health, I will sell at my residence in township 19, range 18, according to the government's survey, one plush raspberry cow, age eight years. She is of undoubted courage and gives milk frequently. To a man who does not fear death in any form, she would be a great boon. She is very much attached to her present home with a stay-chain, but she will be sold to any one who will agree to treat her right. She is one-fourth Shorthorn and three-quarters hyena. I will also throw in a double-barrel shotgun which goes with her. In May she usually goes away for a week or two and returns with a tall, red calf with wobbly legs. Her name is Rose. I would rather sell her to a non-resident, the farther away the better."—Associated Advertising.

RANCH BARGAIN

320 acre improved Idaho cattle ranch, all machinery, lease on section state land and relinquishment on pasture homestead all joining—good range for stock. Price \$13,000 complete—good terms.

FEDERAL LAND COMPANY
Ogden - - - - - Utah

BUY FROM THE MANUFACTURER

L. D. S GARMENTS
SWEATERS
BLANKETS
ROBES
MACKINAWS
HOSIERY
UNDERWEAR

Write us for prices on any of these—We can save you money.
Salt Lake Woolen Mills Co.
50-52-54 Post Office Place
Salt Lake City, Utah

FOR SALE

80 acres on Lincoln Highway, fine beet, alfalfa and general farm land. Best water right—ditches constructed, \$43 per acre. Easy terms. Questions answered and reasons given.

Address owner,
Iosepa W. J. MERZ Utah

PATENTS. Picture of Patent Office and 3-year calendar Free. Fitz Gerald Co., Patent Attorneys 885 F. St. Washington, D. C. Established 1880

When you answer advertisements, mention the Utah Farmer.



* * * Combined with the * * *
Deseret Farmer and Rocky Mountain Farming
Established - - - - - 1904

Entered as second-class matter in the postoffice at
Lehi, Utah.

Published every Saturday by the
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LEHI, UTAH.

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OFFICES

All mail should be addressed to the Utah Farmer
Lehi, Utah, Kirkham Building.
Our office at Salt Lake City, Utah,
is in the McIntyre Building.

Members of the



New York Office 5th Ave. Bldg.
S. E. LEITH, Mgr.

Chicago Office Steger Bldg.
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C. A. COUR, Mgr.

Change in Address—When ordering a change in the
address, subscribers should be sure to give their
former as well as their present address, otherwise the
address cannot be changed. This is a matter of im-
portance to you and to us.

OFFICIAL ORGAN

Utah Horticultural Society, Utah State Dairymen's
Association, Utah State Bee Keepers' Association
Bear River Valley Farmers' Protective and Commercial
Association, Agricultural College Extension Depart-
ment and Utah State Fair Association, Utah-Idaho
Millers' and Grain Dealers' Association, Utah Fruit
Growers Association.

OUR GUARANTEE

We guarantee every subscriber against loss thru dis-
honesty or attempted swindle by any advertiser in
this publication. We do not attempt, however, to
adjust trifling differences between the subscribers and
honest responsible advertisers, nor will we pay the
debts of honest bankrupts. Notice of complaint
must be sent us within thirty days from date of the
transaction, and the subscriber must have mentioned
Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent
upon application.

The hen that works during her meals, scratch-
ing in the straw is more likely to work between
meals to provide the nation's breakfast staple.

Better feeding is not necessarily more expen-
sive feeding but a more varied and better balanced
ration. How many make a study of this impor-
tant part of live-stock raising—a balanced ration.

Beware of getting something for nothing. As
a general proposition no one is running around
the country for your benefit. If he is doing any
running around it is for his benefit. He may
benefit you by benefiting himself, but your benefit
is purely incidental.

THE FARMER'S SHARE

Recently while a representative of the Utah
Farmer was in the East looking over the markets
of western farm products and noting the prices
charged, he was again impressed with the imper-
fection of a marketing system that gives to the
producer such a small part of what the consumer
has to pay.

In the far west we are at a disadvantage in be-
ing at considerable distance from the large centers
of consumption. It is especially important, there-
fore, that we look well into the marketing facilities
that are available in order that we may compete
to the best advantage. We suggest that the Agri-
cultural College or some other agency vigorously
take up the question of assisting the farmer to
dispose of his products to the best advantage.

EXCHANGE IDEAS THROUGH "THE FARMER"

The Utah Farmer has always considered that
its chief function is to be of service to its sub-
scribers. We want to make this YOUR paper
in every respect. We feel that many of our sub-
scribers have had experiences that others should
know about. To these we want to throw open the
columns of the "Farmer" and make of it a real
organ for the exchange of ideas among our sub-
scribers. We also welcome any questions you
may have and we promise to have them answered
by the best authorities that can be obtained. Re-
member that it gives us pleasure to serve you.

FARMER'S SCHOOLS

Every farmer and every housewife in the State
should plan to attend at least one of the numer-
ous farmer's schools and housekeeper's conferences
being held by the Agricultural College in different
parts of the State. If one of these schools is not
coming to your home town, why not plan a little
trip to the one nearest your town, or better still
take a week off and attend the annual Round-up
held in Logan, where in addition to the regular
instruction there will be an opportunity to visit
the laboratories, barns, and other points of in-
terest?

It is a good thing to get away from home once
in a while. Why not combine pleasure with pro-
fit on the trip this time?

THE EXPERIMENT STATION

A number of unusually valuable publications
have been issued from the State Agricultural
Experiment Station during the last few months.
These remind us of the excellent work that is being
done for the farmers and the State generally by
this institution.

The primary function of the Station is to dis-
cover new truth regarding agriculture. This re-
quires a great deal of patient work, and often con-
siderable time. The farmers may not hear very
much about the work of the Station, but it is
nevertheless working with its corps of trained
experts for their benefit. Months may be required
to discover a fact that can be explained in a few
minutes.

We feel to commend the work of the Experi-
ment Station and we want to assure it of the
hearty support of the Utah Farmer.

SO YOU MAY KNOW.

A little over nine months ago we ordered a
large shipment of paper for the Utah Farmer.
The mills made this and that excuse for delay in
shipping, and finally a definite promise was made
that it would be delivered in October. Many
letters and telegrams have passed between us and
now they say the paper is made up and on floor
of the mills but can not get cars to ship it.

This delay has caused us a great deal of trouble
and considerable expense. We have been com-
pelled at times to use a poorer grade of paper
than we ordinarily print on. At times we have
been delayed in getting out our paper—now the
climax is reached and we are under the neces-
sity of combining two issues January 6 and Jan-
uary 13.

A telegram this morning gives us the assurance
that shipment of car will be shipped today.

We are paying more than double what we did
a year ago for paper. Just how long this unusual
condition will exist no one seems to know. We
believe our subscribers and advertisers will accept
of the situation, for we want to assure you we
have done everything possible to relieve the
situation.

FARMER'S READING

These are the days when the farmer must get
his book ideas for the year. During the busy
summer time, as well as during the spring and
fall, there is very little time in which the farmer
and his household can read. He should, therefore,
take advantage of this slacker season to read
books on agriculture, and farm papers, as well as
other reading matter that will help him to be a
broader and better citizen.

The Utah Farmer, as well as the State Agricul-
tural College, will be glad to advise farmers re-
garding good books on agriculture or other sub-
jects of interest.

THE SCARCITY OF HAY

A combination of circumstances has made hay
very scarce this winter. Last winter being of
such a nature that a great deal more feeding than
usual had to be done, the supply of hay was un-
usually low in the spring. Then came the frost
when the first crop of alfalfa was partly grown.
This meant that this crop was practically useless.
These two conditions made hay very high last fall
and now the unusual snowfall for this season in-
dicates that this will be another winter of much
feeding.

The Farmer suggests that every means possible
to conserve the limited supply of hay be resorted
to in order that there may be sufficient to last till
spring. The wasteful methods of feeding so com-
mon on many farms should be abandoned—at least
temporarily.

CONSTRUCTIVE LEGISLATION

With the convening of the Utah Legislature this
year there will be the usual number of bills in-
troduce covering every imaginable subject. The
legislators will be confronted with all kinds of
difficulties in selecting from the great mass of
proposed legislation the few essential laws that
are necessary to the best welfare of the people.
We have considerable confidence in the men se-
lected by the people of the State to make laws
and we hope that in their deliberations they will
give special consideration to those fundamental
questions that are so vital to the industrial
prosperity of the people.

We feel that the farmer is at the basis of a
economic well being, and we hope that the legi-
lation which affects the farmer will be such that
he can gradually establish his business on a more
sound and profitable basis.

PEA CANNING

The canning of green peas, an industry which
means much to farmers, has sprung up in Utah
during the last few years. The canning of peas
on a large scale has not been carried on until
comparatively recent times, when the cooking of
the peas under steam pressure has revolutionized
the industry.

Until recently green peas were a delicacy that
was considered available only during a compar-
atively few weeks of the year; but with the de-
velopment of improved methods of canning the
delicacy can be enjoyed at any season of the year.

The demand for canned peas of a good quality
has increased very rapidly and is now increasing
faster than the supply. This year, for example,
wholesalers cannot fill their orders.

The Utah Farmer wishes to encourage
establishment of industries of this kind that are
known to be profitable alike to the manufacturer
and the farmer.

DRY-FARMING AN IMPORTANT AGRICULTURAL ASSET

(Continued from page 3)

Perkins, Monticello, 65 bushel Oats; Henry S. Barnes, Monticello, 12 tons Carrots per acre, Turnips weighing 14½ pounds each; L. H. Doyle, Monticello, Radishes weighing 2½ pounds each; Hans Jensen, Monticello, 105 bushel Potatoes, 40 bushel Corn per acre; J. B. Harris, Verdure, San Juan County, 7 tons Sugar Mangos per acre; Lamar Graf, Kanarraville, Iron County, 100 bushel Corn per acre; R. L. Davis, Kanarraville, 75 bushel Corn per acre; Samuel K. Christensen, Springdale, Washington County, 75 bushel Corn per acre; Moses Gifford, Springdale, 37 bushel Turkey Red Wheat per acre; Bishop James B. Burrows, Hatch, Piute County, 200 bushel Potatoes per acre; Harold Russell, Springdale, 686 pounds of Beans per acre; Seth M. Jones, Enterprise, 801 pounds Tepary Beans, 50 bushel Corn, 120 bushel Potatoes, 500 pounds Alfalfa Seed, 482 pounds Sudan Grass Seed per acre; Knight's Dry-farm Co., Tintic, 52 bushel Turkey Red Wheat; Grover W. McBride, Tooele, 37 bushel Turkey Red Wheat per acre.

All of these yields were produced under strictly normal climatic conditions with no subterranean water influences whatever. It ought to be noted here that the yield of 67 bushel wheat was produced on the Nephi-Levan bench with a rainfall during the fallow and growing years of only 17 inches (13½ inches each year) and perhaps is the biggest yield of wheat ever produced per inch of rainfall in the United States, being nearly 2½ bushels for every inch of rainfall, as well as being the highest record yield on the dry-farms in this state, irrespective of the amount of moisture.

The 200 bushels of Potatoes produced by Bishop Burrows is the largest yield on record, also the 100 bushels of Corn by Lamar Graf, and all of these yields speak well of the power of our dry-farms to produce bounteous crops in the future.

These are only a very few of the many reports recently received. Hundreds of others, almost equally good, could be cited. Splendid

yields of wheat, barley, oats, rye, millet, corn, alfalfa, potatoes, beans, sudan grass, are reported from nearly all parts of the state, and in some of the more favored sections many encouraging yields of vegetables and small fruits are added to the list.

Important Sections.

Cache Valley is the big developed district and is producing by far more than any other section, having made an enviable record for many years, due principally to the ideal climatic conditions and the excellent quality of soil.

San Juan County reporting about 750,000 acres susceptible to cultivation, is without question the most promising BIG, undeveloped district. The soil is fertile and responsive and the rainfall 16 to 22 inches with ideal climate for nearly all crops.

Box Elder County has an area of over 1,000,000 acres that some day within the next generation will be utilized under dry-farm methods. Some sections offer exceptional opportunities, while others will be a little slow in development; but the facilities are present for a great future on the very large portion of these lands.

Importance to State's Agriculture.

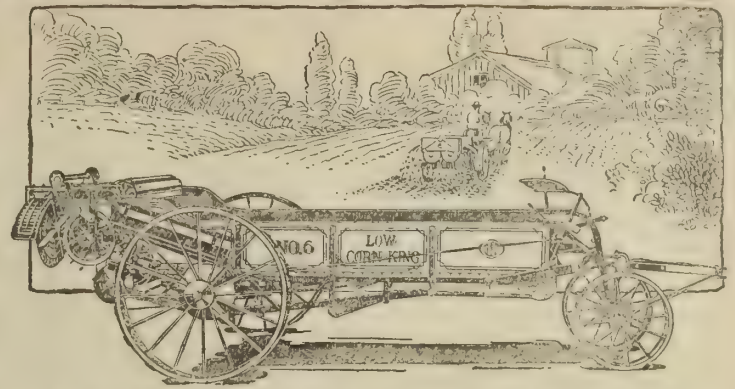
Close estimates show that the products of the dry-farms are not far from the \$7,000,000 mark. While this does not seem a large sum compared with the farm business of the state—said to be \$200,000,000—but when we begin to segregate this large sum and give credit to each member of our wonderful agricultural family, we find that dry-farming gives us a sum in excess of several important crops. For instance, the sugar beet crop of the state—great as it is as a resource to the farmer—actually gives him much less than do the dry-farms of the state.

While for many years dry-farming has been recognized as an important factor in the agriculture of our state, it is destined to wield a still more potent influence in the development of the state's agricultural resources. Its growth will very likely be steady and healthy void of the spasmodic booms and reverses that have characterized its history in other states. Rather our growth will be natural and normal, with a development wholesome and in keeping with the advancement of other agricultural industries.

Possibilities.

There are approximately 800,000 acres now under cultivation upon which dry-farm methods are practiced. A precursory survey made while traveling over the state reveals the wonderful possibilities of dry-farming and the extent of the dry farm areas. Great stretches of fertile lands favored with climatic conditions that make it possible to increase the present cultivated area eight to ten times, and then have room for a few pastures on the outside. There is no need of locating on poor unproductive lands; nor on good lands where unfavorable climatic conditions obtain, while some of our best lands, blessed with almost ideal conditions for the growing of paying crops, lie untouched and are silently, but earnestly inviting the sympathetic, "magic touch" of the husbandman, eager to yield their rich treasures if only united with the proper forces.

If all the dry-farm acres in Utah could have the right kind of men and machinery placed upon them, they would be capable of producing a crop of 100,000,000 bushels of wheat annually, besides millions of dollars worth



Settle the Spreader Question

THE farmer who uses a Low Cloverleaf, Low Corn King or Low 20th Century spreader these days is the man who makes the most money. His land increases in value when regularly fertilized. His crops grow better in quality and larger in yield when supplied with available plant food. Of all the spreaders on the market, the Low Cloverleaf, Low Corn King and Low 20th Century come nearest to doing this work as it should be done.

It is a long jump from the ordinary machine to the modern low spreader with its double beater and wide spread. Every farmer who knows the value of good spreading is buying one of these wide spread machines. As a matter of fact, no farmer can afford to buy any other kind, because the saving of time and labor and the better job of spreading done by a Low Cloverleaf, Low Corn King or Low 20th Century makes them worth more than ordinary spreaders.

Complete information about these machines is worth money to you. Drop us a line at the address below and we will show you very plainly why it will pay you to buy a Low Cloverleaf, Low Corn King or Low 20th Century spreader.

International Harvester Company of America

(Incorporated)

SALT LAKE CITY, UTAH

Champion Deering McCormick Milwaukee Osborne Plano

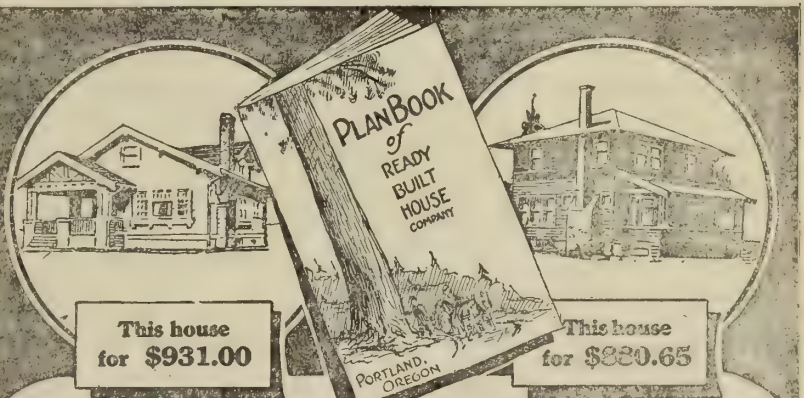
Cut Out This Adv.

Send with name and address—get Latest WITTE Engine Prices. All Cash, Part Cash, or No Cash Down—and my FREE Illustrated Book, "How to Judge Engines." Write today. State size of engine wanted. Address: WITTE ENGINE WORKS, Oakland Avenue, Kansas City, Mo. 0906 Empire Building, Pittsburgh, Pa.

Make Money Sawing Lumber

Every farmer who has a woodlot can make money in his spare time sawing lumber with an "American" Portable Saw Mill. If he has no woodlot, he can do "custom-sawing" for his neighbors at big prices. An "American" mill will saw 2500 feet a day with a H.P. farm engine. Profits mount fast. "American" Mills are designed especially for farm use. Easy to move and anyone can operate. Famous for quality for years. Get an "American" and start to make money.

Sold by Landes & Company Salt Lake City, Utah. Stock of mills on hand.



This house for \$931.00

This house for \$820.65

DO YOU WANT TO SAVE MONEY ON YOUR HOUSE?

OUR PLAN BOOK illustrates many attractive homes and we will send it to you free of charge upon request.

Should you want a house that is different, send us the rough plans and we will complete them for you and give you an exact estimate of the cost of all material delivered at your station, READY TO ERECT.

Every piece is cut to fit and carefully numbered, no waste, no mistakes. When you receive the material, you need is COMMON SENSE AND A HAMMER.

These houses are not only saving our customers \$100 to \$200 on material but the labor saving in building often amounts to twice that much.

Write us today for Our Plan Book

READY BUILT HOUSE CO.

31 Ship Street

Portland, Oregon

of other crops. What a tremendous possible resource this is to the state, and yet, who can say that the next 20 or 30 years, under wise guidance and the prospects of plant improvement and of methods, will not bring this

Let every man do his best and hasten the day.

The results of the past fully justify the hope and prophesy of a great future in the dry-farm end of Utah's agriculture.

Remember, it takes ten or more to organize an association, and the association must start business with applications for at least \$20,000 of loan. If some of your members cannot use the money at once, but you need them to make up your total, let them join now, sign the articles of association, and get the money any time within six months. We would advise you not to accept for membership any

one who cannot use the money within six months.

Remember, only actual farmers may borrow, and only borrowers may become members. A borrower need not actually live on his land, but he must farm it either directly or with hired help. If he leases it to a tenant he cannot borrow, because he ceases to be an actual farmer. Corporations and partnerships cannot borrow.

We get a great many inquiries asking whether or not loans may be made on lands held under irrigation or reclamation projects. If there is no lien against your land you may borrow under the Federal Farm Loan Act. You must be able to execute a first mortgage to borrow under the Act. Or, you could borrow to wipe out the lien that now exists, under the limitations prescribed by the law.

If you are interested in getting some of this kind of money for 5 to 10 years time on the amortized pay not to exceed 6 per cent interest you ought to organize and do business.

The twelve Federal Farm Loan banks have been established and Utah, Nevada, Arizona and California will have their central bank at Berkeley, California.

If you do not understand all the details about the working of these banks send for printed literature to the Federal Farm Loan Bureau at Washington D. C.

POULTRY

REARING CHICKENS.

Poultry Specialists Offer Suggestions for Brooding and Feeding Young Chicks.

Brooding with hens is the simplest and easiest way to raise a few chickens and is the method which is used almost exclusively on the average farm. Artificial brooders are necessary where winter or very early chickens are raised, where only Leghorns or other nonsitting breeds of poultry are kept, or where large numbers of chickens are raised commercially. Sitting hens should be confined to slightly darkened nests at hatching time and not disturbed unless they step on or break their chickens when hatching. The eggshells and any eggs which have not hatched should be removed as soon as the hatching is over. Hens should be fed as soon as possible after the eggs are hatched, as feeding tends to keep them quiet; otherwise many chicks will leave the nest. In most cases it is best that the hen remain on the nest and brood the chicks for at least 24 hours after the hatching is over. All the chickens should be touched or otherwise marked before they are transferred to the brooder or brood coop, so that their age and breeding can be readily determined when they are matured.

Hens will brood successfully 10 to 18 to 25 in warm weather, depending upon the size of the hen. Powder the hen with a good insect powder before moving her and the chicks to the brood coop. The hen should be dusted every two weeks or as often as necessary until the chickens are weaned. If lice become thick on the chickens or if they are troubled with "head lice," a very little grease, such as lard or vaseline, may be applied with the fingers on the head, neck, under the wings, and around the vent.

Brood coops should be made so that they can be closed at night, to keep

out cats, rats, and other animals, and enough ventilation should be allowed so that the hen and chicks will have plenty of fresh air. The hen should be confined in the coop until the chickens are weaned, while the chickens are allowed free range after they are a few days old.

The brood coop should be cleaned at least once a week and kept free from mites. If mites are found in the coop, it should be thoroughly cleaned and sprayed with kerosene oil or crude petroleum. From 1 to 2 inches of sand or dry dirt or a thin layer of straw or fine hay should be spread on the floor of the coop. Brood coops should be moved weekly to fresh ground, preferably where there is new grass. Shade is very essential in rearing chickens, especially during warm weather; therefore, the coops should be placed in the shade whenever possible.

Chicks are usually left in the incubator from 24 to 36 hours after hatching, without feeding, before they are removed to the brooder, which should have been in operation for a day or two at the proper temperature for receiving the chickens. A beginner should try his brooding system carefully before he uses it. After placing the chickens in the brooder they can be given feed and water. Subsequent loss in chickens is frequently due to chilling received while taking them from the incubator to the brooder. They should be moved in a covered basket or receptacle in cool or cold weather.

The capacity of brooders and hovers is often overestimated, and one-half to two-thirds of the number of chickens commonly advised will do much better than a larger number. The danger from fire, due frequently to carelessness and lack of attention, is considerable in cheap brooders and hovers, while there is some risk in the best grades, although proper care will reduce this to a minimum. Individual hovers in colony houses or several in one large house are giving quite general satisfaction on small poultry farms, while the pipe system of brooding is commonly used in large commercial poultry plants and where extensive winter brooding is done. Gasoline brooders, brooder stoves burning engine-distillate oil, and a separate individual hover heated by a coal fire are coming into more general use, each with a capacity varying from 200 to 1,500 chickens. These large individual brooders are used in colony houses, and when the chickens are weaned the colony house is used as a growing coop, which requires a smaller investment than the long, piped brooder house and allows one to rear the chicks on range to good advantage.

The best temperature at which to keep a brooder or hover depends upon the position of the thermometer, the style of the hover, the age of the chickens and the weather conditions. Aim to keep the chickens comfortable. As the operator learns by the actions of the chickens the amount of heat they require, he can discard the thermometer if he desires. When too cold they will crowd together and try to get nearer the heat. It is impossible to state for each case at what temperature the brooders should be kept to raise young chickens; however, it will run from 90 degrees up to 100 degrees in some cases, as some broods of chickens seem to require more heat than others, an average being 93 degrees to 95 degrees for the first week or 10 days, when the temperature is gradually reduced to 85 degrees for the following

10 days, and then lowered to 70 degrees or 75 degrees for as long as the chickens need heat.

Young chickens should be fed from three to five times daily, depending upon one's experience in feeding. The young chicks may be fed any time after they are 36 to 48 hours old, whether they are with a hen or in a brooder. The first feed may contain either hard-boiled eggs, johnnycake, stale bread, pinhead oatmeal, or rolled oats, which feeds or combinations may be used with good results. Feed the bread crumbs, rolled oats, or johnnycake mixtures, moistened with water, five times daily for the first week, then gradually substitute for one or two feeds of the mixture finely cracked grains of equal parts by weight of cracked wheat, finely cracked corn, and pinhead oatmeal or hulled oats, to which about 5 per cent of cracked peas or broken rice and 2 per cent of charcoal, millet, or rape seed may be added. A commercial chick feed may be substituted if desired. The above ration can be fed until the chicks are two weeks old, when they should be fed on grain and a dry or wet mash mixture.

After the chicks are 10 days old a good growing mash, composed of two parts by weight of bran, two parts middlings, one part cornmeal, one part low-grade wheat flour or red-dog flour, and 10 per cent sifted beef scrap, may be placed in a hopper and left before them at all times. As soon as the chickens will eat the whole wheat, cracked corn, and other grains, the small-size chick feed can be eliminated.

Fine charcoal, grit, oyster shell, and clean water should be kept before the chickens at all times, and cracked or ground bone may be fed where the chickens are kept in small bare yards, but the latter feed is not necessary for chickens that have a good range.

FLOORS FOR HEN HOUSES

Jacob Booth.

More depends upon the condition of the floor of the hen house than most of us really know. Just now I am inclined to speak of this because of the danger of earth floors that are permitted to get filthy. Think of it a moment. How often does it seem just the right time to clean off such a floor? Are we not apt to let it go, day after day and week after week, until it becomes foul beyond description? The hens run on these floors and their droppings fall very often, but they are not taken care of. By and by the crisis comes. Disease gets in among the birds and we have a serious loss.

Now, if earth is to be used, a good way is to lay a close floor, say of cement, and on the top of this spread the earth. The hens will dig this over and get a great deal of good out of it, and when it begins to get worn out and filthy it can be shoveled right up and drawn away, when fresh earth can be put in its place. If this is done, there need be little fear of an epidemic of any kind, provided of course, other precautions are taken to keep the houses clean and free from insect pests.

Where board floors are used, I have sometimes seen the droppings left till they were several inches deep and as hard as if they had been cemented down. I helped clean one such house once. I had to take a pick to loosen the accumulation of months. Now if these droppings had been taken off regularly all that trouble would have been avoided.

A cement floor without a covering of earth does not commend itself to



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me. It is hard and cold and rough for the birds to work on. Earth is for better, but it should be as nearly as possible clean earth. Cement has the added advantage of keeping out rats. They don't like to sharpen their teeth on it very long at a time.

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HOME

HOME NURSING.

How to Give Baths and Home Treatment.

(This article is from the leaflet of the Home Economics Associations and is being used in connection with their work.)

In the treatment of infectious diseases one of our strongest weapons of defense is water, which should be used with great freedom both internally and externally. The bath in this connection serves several important functions among which may be mentioned: 1. Cleanliness. 2. Comfort of the patient. 3. Elimination or removal of poisons from the body. 4. Stimulation.

By far, too frequently this very important measure is omitted and the patient is allowed to go for days unclean, uncomfortable, and the process of elimination hindered because the mother or attendant does not know how to give a bath to a patient, in bed, or is afraid that by so doing the patient will take cold.

The dangers to the patient if ordinary precautions are taken are practically nil, and the benefits derived are so important that the frequent use of the bath cannot be too strongly recommended.

In the first place, baths for cleansing purposes and to add to the comfort of the patient, should be given in all cases of sickness if one is confined to bed for a day or more.

Elimination or the process of "cleansing the system" of disease is accomplished through 1. The Skin. 2. The Kidneys. 3. The Bowels. Therefore, in such sickness as colds, grippe, tonsillitis, sore throat, ear ache, contagious diseases, rheumatism, and other infections, local or general, which cause a fever, the bath has the effect of lowering the temperature, and removing from the body waste material and poisons which are the result of the disease, in addition to giving comfort and stimulation to the body. Other conditions for which the bath should be used are the sickness following child birth, after severe accidents, for nervousness, sleeplessness, etc.

Three forms of baths may be mentioned here, 1. The tub bath. 2. The sponge bath. 3. The foot bath.

The tub bath is generally impracticable in cases of sickness except for infants and when employed, care should be exercised to prevent unnecessary exposure and chilling of the body. The temperature of the room should be near that of the body, and the water should be warm enough to be comfortable to the uncovered elbow. It is unsafe to judge the temperature of an infant's bath with the hand, for water comfortable to the hand is generally uncomfortably hot to the more protected portions of the body. Very hot or very cold baths should seldom or never be given in home treatments except under the direction of a physician.

The sponge bath on the other hand has a wide range of usefulness, and it is doubtful if a patient is ever too sick to be benefited and refreshed by a daily bath.

In giving the bath it is well to have a basin of water, two Turkish towels, a face towel, wash cloths, soap, alcohol or powder, and the clean bed linen handy. The water should be changed at least once during the bath. The



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basin should be placed near the bed by newspapers. Remove the gown on a stand or chair which is protected and wash first the face, then w.

and dry immediately in succession the arms, chest, abdomen, back and lower limbs, being very careful to expose only that part of the body which is being washed. After careful drying with the towel the parts should be rubbed with alcohol or powder. In washing the lower limbs, one foot at a time should be placed in the basin.

All articles used should be especially adapted for the sick room. A bath basin deep enough for a foot bath, a thermometer, plenty of bed linen, pieces of woolen blankets and old clean cloths, a small basin and a good bed pan are all very necessary.

Since elimination is effected through the bowels and kidneys as well as through the skin, it is evident that only a small part of this important process is accomplished by the bath. Too much emphasis can hardly be placed upon the importance of opening the bowels freely at the onset of disease. This is true in almost every case, even though the bowels are apparently moving normally. A large dose of Castor Oil or Epsom Salts is usually the cathartic of choice in spite of the unpleasant taste. The disagreeable taste of Epsom Salts can largely be concealed by dissolving them in a little warm water and by breathing only through the mouth for a minute or two or until the mouth has been rinsed out. For quick results one should drink a large quantity of water or lemonade after taking salts. Castor oil is usually to be preferred for children, and the taste can be largely covered up by taking it in fruit juice.

The activity of the kidneys may be

greatly increased by drinking large quantities of water, hence frequent internal baths are quite as important as bathing the skin. It is not necessary nor desirable to overdistend the stomach by taking large quantities of water at one time, but for instance a glass or more of liquids in some form every hour will go a long way toward combatting disease.

A foot bath is most efficacious when given as hot as the patient can stand. It may be given with the patient on his back and the basin in the bed, or with the patient sitting on the edge of the bed and the basin on the floor. Better effects are generally obtained by using a tablespoonful of ground mustard to a basin of water. Hot water may be added slowly without removing the feet, by placing the hand in the basin and stirring while adding the water. A woolen blanket should be placed around the patient and the foot tub in order to retain the heat and to prevent exposure. The feet should remain in the bath for 10 or 15 minutes then dried and wrapped in a blanket.

The question is frequently asked how to make up a bed when the patient is too ill to sit up. It may be easily done as follows: The bottom sheet is put on securely and a rubber sheet or oil cloth of several thicknesses of newspaper are placed across the middle of the bed. If this is not large enough to tuck under each side it may be pinned with safety pins. A second sheet is now folded once and placed over the water-proof sheet and tucked under each side. This is a protection to the bed and the patient as it is much more easily changed than the undersheet, and the latter may be changed much less frequently. All of the sheets and clothing on which a patient lies should be perfectly smooth and without wrinkles.

In changing the sheets with the patient in bed, one side of the soiled undersheet is loosened and the clean sheet tucked under in its place. The patient is now turned on his side toward the opposite side of the bed and both sheets rolled up close to his back. Then the patient is gently rolled over the sheets and turned on his other side, the soiled sheet removed, and the clean one put smoothly in place.

In the treatment of local infections, such as boils, abscesses, earache, toothache, sore throat, sprains, bruises, etc., the use of hot moist towels is of great importance. The towels should be folded so that they are about six inches wide and about twenty to thirty inches long. The middle of the towel may now be dipped in boiling water and the ends left out. In this way the towel may be wrung out without burning the hands by holding to and twisting the dry ends. It is best to place a dry towel next to the skin, then the hot towel on this, and cover with another dry towel to hold the heat in. In order to prevent burning of the skin, occasionally pass the hand moistened in cold water or alcohol under the cloths. As soon as the towel becomes cool replace it with another hot one and repeat the process for from thirty minutes to one hour.

This treatment applied to the back frequently in cases of lame back or nervousness, is often most gratifying. It should be remembered that after the use of heat, exposure should be avoided.

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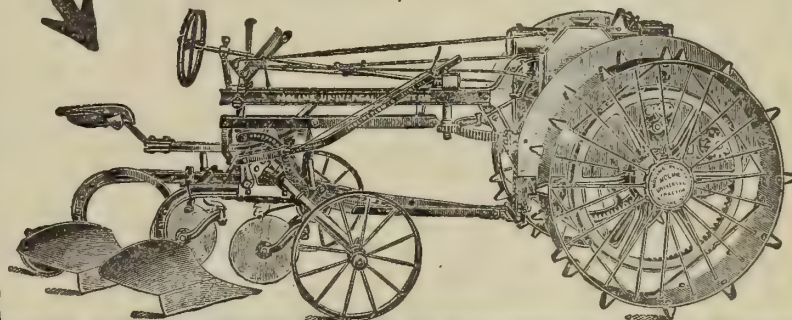
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Live Stock

WINTER FEEDING AND HOUSING OF BROOD SOWS

Litters of pigs born strong and vigorous have an excellent opportunity to live without loss. Those born weak, with lack of vitality, have but small chance to live until weaning time. Whether our crop of pigs next spring will be strong or weak depends largely on how we feed and care for our brood sows this winter.

The following method of feeding suggested has given excellent results and did away with the slop barrel and the feeding of wet feed in freezing winter weather. All feeds were fed out of doors at all times.

The basis of the ration is corn which would be fed on the ear on a feeding floor except to very old sows, when it should be ground and fed wet. If a feeding floor is not available, ear corn should be fed on the ground. Many feeders believe that only injurious results can follow the feeding of corn to pregnant sows. This, however, is not true. As long as sufficient protein and ash or muscle and bone-building food is fed in connection with corn, good results will be secured. As long as we can grow more feed to the acre by growing corn than by growing other feeds, we should use it as the basis and bulk of all of our swine rations.

The basis or bulk of the ration should be ear corn. For mature sows one pound of corn per hundred weight of pork is about right, making 4 pounds per day of corn for a 400-pound sow. With this amount of corn is fed several protein foods.

Alfalfa hay was fed in a rack where the sows could eat all they wanted. The alfalfa was not cut nor chopped but was placed in a self-feeder or rack just as it would come out of a stack. This helped to furnish protein and ash—absolute essentials to strong pigs. Twenty-five mature sows ate about 100 pounds of alfalfa per week. In addition to alfalfa, other protein foods were fed because the sows would not eat sufficient protein in this food alone.

Bran (dry) was fed in a self-feeder also where the sows could eat at will. They relished this bran and the same number of sows ate about 100 pounds of bran per week. Bran was used in place of shorts or middlings because it could be fed in a self-feeder without waste and without the sows overeating and to add bulk to the ration.

Tankage, a 60 per cent protein concentrate, purchased from large packing houses, should be fed in addition to round out the protein requirements. If tankage only were fed, about ten pounds for each 100 pounds of corn fed would be required, but with alfalfa and bran only about one-half as much is necessary. This should be fed dry in a flat-bottomed trough. The flat bottom over which the tankage is spread compels the sows to eat it slowly.

Water was given separate from the feeds. The chill was taken off by heating slightly, but the water was not hot. It was the aim to have the temperature always the same and about equal to that of water when it comes from a well.

The object was to have the sows gain one-half pound per day during pregnancy. This they did. If the sows were not gaining sufficiently, more corn would have been fed. If

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gaining too fast the amount would have been reduced.

This ration—corn one pound per hundred weight of pork with five or six pounds of tankage per 100 pounds of corn fed with good alfalfa hay and bran fed in bulk in self-feeders—furnishes an excellent ration for the development of little pigs. The bran and alfalfa add so much bulk to the ration that constipation, one of our greatest troubles with sows, is entirely done away with. Bulk to a ration is especially important in the winter when sows get but little exercise. Some roots could have been added to this ration with good results.

In addition to being an efficient and as well balanced a ration as could be worked out, it is, under average conditions, the cheapest ration considering the market prices of feeds fed, and when we consider the amount of corn that can be grown on one acre it is even more cheap than other rations.

For shelter these twenty-five sows had an old straw shed about 25 by 30 feet in size with a large opening on the south side. There was at no time, even on the coldest nights, any tendency for the sows to pile. They were probably better housed in this shed, which cost practically nothing besides the labor, than they would have been had they access to a straw stack or a good permanent hog house.

The above method of feeding is as clean and easy a way of feeding as can be devised. It furnishes the necessary balanced ration with protein and ash which are absolutely essential to the proper development of little pigs. The ration was cheaper than it could have been had other feeds been used. It kept the sows entirely free from constipation at all times. The straw shed used for shelter met all requirements of a winter shelter for broods sows perfectly. —Minnesota Agricultural College.

Send in your order for Butter Wrappers today.

WHY NOT BUY STALLIONS RIGHT? W. E. Carroll.

There are several ways of purchasing stallions. Utah has been sufficiently cursed by the stallion peddler and has paid royalty enough to this class of individuals. The time has come when men who are desirous of purchasing stallions should not wait for them to be brought in by some unknown and frequently unreliable person, but should go in search of the type of stallions which is best fit for the needs of the community. This is one thing that the stallion peddler never thinks of and is a question which should be very carefully considered.

Notice has been received by the Department of Animal Husbandry at the Utah Agricultural College that a sale of Percherons is to be held at the Kansas Agricultural College February 9, 1917. Twenty-five stallions and twenty mares are to be sold. The horses have been selected by a man connected with the Department of Animal Husbandry of the Kansas Agricultural College so that a purchaser does not run the same risk as he would if he were buying direct from the breeders. These animals will be good individuals and will be sold right, so if anyone is interested in Percheron stock this would be a splendid opportunity to purchase.

The cow must be kept in clean, comfortable quarters in order to produce the largest quantity of milk and butter. The essentials of such quarters are: Plenty of light; plenty of fresh air, with no drafts; convenience; a floor that can easily be kept clean.

A soil may be called fertile so far as containing plenty of plant food, such as nitrogen, phosphoric acid, or potash is concerned, but if the humus content is low, good crops can not be raised. Using barnyard manure is the most economical way of getting humus into the soil.

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MANAGEMENT OF RANGE BULL.

"One of the best ways to increase the percentage of calves dropped is to take the bulls off the range in the fall and put them in a pasture by themselves. It is well to choose a pasture which has not had any stock in it during the growing season. Such pastures are apt to have sufficient grass to carry these animals through the winter in good condition. If not, extra feed will have to be supplied, say alfalfa hay, silage, milo, cottonseed cake or cottonseed, feeding from one-half to two pounds of grain per day. All that will be necessary will be to keep the bulls in a good healthy and vigorous condition, not to make them "big fat." Animals which are too fat do not make the best breeders under range conditions. It will be beneficial if the pasture does not contain natural shelter, to build them a shelter. Money thus invested should yield a good rate of interest to the cattlemen in the shape of feed saved and conserved energy of the bulls.

Another important advantage in favor of the winter pasture for bulls will be the possibility of securing a better grade of bulls for range purposes. Many cattlemen at the present time object to buying pure-bred bulls which are not acclimated, accustomed to our grazing ranges, or which do not understand how to rustle for themselves. If a system of separation is practiced these bulls would only be on range during breeding season, during which time the ranges are usually in their best condition for grazing purposes.

What should these bulls be expected to return from this kind of treatment? The reward will be as follows:

- First—Larger percentage of calves dropped.
- Second—Greater vitality.
- Third—Uniformity of age.
- Fourth—Lower death rate.
- Fifth—Uniformity of size.
- Sixth—Uniformity of color and conformation.

When the bulls are separated from the cows during the winter and spring months, cattlemen control the time of year when the calves will be dropped, and instead of calves being dropped in every month of the year, as at present, they can have them coming at the most favorable seasons, according to the location of the ranch in the state. It will be of advantage to have them dropped before the screw fly is making its rounds, thus saving time, labor and money. Furthermore, the death rate will be decreased both among cows and calves. A cow which is in thin condition, but which manages to pull through until the spring has started, usually loses her life trying to give birth to a calf in January or in some of the other months which are cold and unfavorable for calves.

What can be expected of the bull if left out all winter to rustle for himself during the cold winter months? This is what may be expected and what usually happens:

- First—A small calf crop.
- Second—Calves of all ages and sizes.
- Third—Lack of vitality and conformation in calves.
- Fourth—Heavy death rate among calves and cows.
- Fifth—Bulls which are thin in flesh are run down in vitality.—Prof. G. W. Barnes.

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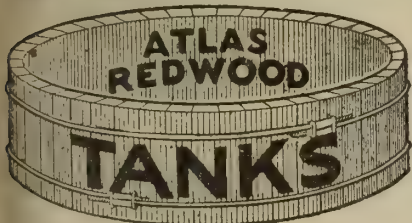
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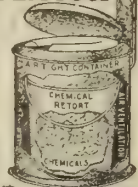
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Pointers For Practical Farmers

A. H. Relgor.

During this cold weather are you providing well for your live-stock? See to it that the chickens have good clean quarters, free from draughts, and sufficient feed and drinking water. Remember fresh eggs are selling at 5 cents each, sheep are selling at 10 and 12 dollars each so think how foolish of the flockmaster to trust to providence. The wise sheepman is buying corn and hay and storing it in case of severe storm so he can feed and save his flock. Don't let your hogs, cattle and horses sleep in damp dirty places but provide good clean bedding for them and give them a little extra feed during the cold weather. You will find it a paying investment to take good care of all your stock.

All farm products of the soil are very high in price and owing to the rush of business in the factory and mine there will be an extra heavy demand for all these products the coming season, for that reason you should raise larger quantities. Send for a Seed Catalog and select your order, your early cabbage, tomatoes and other early vegetables that you contemplate growing, then you will have them to sell when the other fellow will tell you I never thought of my garden seeds until this spring and it was then too late to send for them.

You will find the growing of potatoes every year a very profitable crop, but you must be sure you have good seed stock and plant them on good clean ground. One season I paid 5 cents per pound for my seed stock and harvested 271 sacks per acre, my neighbor bought some culls at 40 cents per hundred pounds and harvested 120 bags per acre, my neighbor paid an extremely high price for his seed, while I considered my purchase a splendid bargain. It is strange but never-the-less it is true many people will plant anything they have handy and pay but little attention to the quality they are planting. You surely would not breed your live-stock to a poor sire, well then what is true in animal life and important is much more so in plant life.

Hams and bacon are selling at 20 to 25 cents per pound. Make it a point to butcher a few hogs and pack and cure some of these products. Should you not be familiar with this class of work, as a rule there is someone in your neighborhood who is handy at this kind of work, get him to assist you. Should you find you have more than you can conveniently use you will find a ready market for your surplus. Hundreds of cars of these products are shipped into this Inter-mountain country every year and a large proportion is sold again to people who raise hogs.

The good house wife pretty much all over the country recently refused to buy eggs, turkeys and other farm products on account of the prevailing high prices but in spite of this boycott several commodities advanced shortly. This brings out one convincing fact after all it is supply and demand that makes market value.

There is, perhaps, no single practice in farm management of more importance than a systematic rotation of crops. It will help to maintain fertility, conserve soil moisture, and control weeds, and yet withal it is a feature of farm work to which, as a rule, very little consideration is given.

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Take any number from one to fifteen, place in the squares so when added together, vertically, horizontally and diagonally, the total will be

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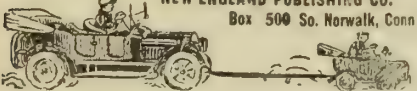
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RICHARDS LIVE STOCK CO.
Virginia Idaho
The West's Best Durocs.

Wanted to hear from owner of good farm for sale. Send cash price and description. D. F. Bush, Minneapolis, Minn.

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Ten of the Finest Vegetables FOR 25c
we will mail one large packet each of the following Vegetables in a coupon envelope good when return, for 25c worth of seeds on 75c order; thus getting the 10 packets Free.
Bradley's Earliest Radish; crisp and brittle Extra Early Egyptian Turnip Beet; smooth Bradley's Earliest of All Lettuce; crisp Bradley's Improved Early Jersey Wakefield Cabbage; Bradley's Earliest of All Blood Red Tomato; Extra Early Adams Sweet Corn; Earliest of All Bradley's Perfection Long White Spine Cucumber; Bradley's Mammoth Yellow Prize taker Onion; New York Imp. Spinless Egg Plant; Improved Mammoth Ruby King Sweet Pepper.
25c buys all the above and we will send one large pkt. "SPENCER SWEET PEAS" a mixture of 10 Varieties, carefully hand mixed worth 15c.

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BIG ILLUSTRATED CATALOGUE
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The family cow should be a constant source of cheap, pure and delicious milk. Such may be the case, if a few precaution are taken. It is frequently observed, however, that under the conditions surrounding the family cow only dirty, diseased milk can be produced.

A cow may be suffering from tuberculosis, the worst disease to which she is subject, and still show no signs of it to the proud owner. For the sake of the children who drink the milk, a qualified veterinarian should be called upon to inspect and test each cow every year.

With the assurance of a healthy cow, she should be housed in a clean, well lighted shed and provided with a clean yard in which to exercise. The milk should be drawn into clean, small topped milk pail and kept cool until consumed.

Milk sours and spoils because of the bacteria which enter it with dirt from the cow and from pails not thoroughly washed. Keeping these bacteria out of the milk and preventing their growth by keeping the milk cool, are easy and efficient means of procuring the best of milk from the family cow provided she is free from disease.—Percy Werner, Jr., Missouri Experiment Station.

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Questions and Answers

Blackfoot, Idaho.

Utah Farmer:

Dear Sir:—Please advise me through your valuable farm paper what effect sugar beets frozen in the ground this year will have on next years crop? Will it act as fertilizer or otherwise? What crop should follow beets under these conditions? Thanking you in advance for this information, I am your truly,

N. P. Fackrell.

Sugar beets decaying on the land will probably not injure it for the next crop. The organic matter added by them is a benefit, but if they are not thoroughly decayed, the coarse material may be in the way the first year. Of course you understand that in growing beets continuously on the same land you are more likely to have insect and disease trouble.

Provo, Utah.

Dear Sir:—Please tell me through your next paper, how many feet of straw in the stack I am to have for a ton. And oblige,

Jesse Stubbs.

Answered by Dr. F. S. Harris.

I do not know of any standards for judging the weight of straw by measurement but the following rules for hay will probably help you.

There are about 343 cubic feet of prairie hay that has settled 30 days or more, but 422 cubic feet is used under ordinary conditions. For alfalfa from 422 to 512 cubic feet are used in different regions for hay that has settled 30 days or more. When the alfalfa has settled 5 to 6 months 422 cubic feet and after a year, 343 cubic feet are usually accepted as a ton. For round stacks a ton usually contains 512 or more cubic feet after 30 days. The number to be used varies with depth of stack as well as with time of settling and the nature of the hay.

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“Civilization begins and ends with the plow.”
—Roberts.

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**For complete information address: The Director,
Extension Division, Logan, Utah**

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VOLUME XII; No. 25

LEHI AND SALT LAKE CITY, UTAH

JANUARY 20, 1917



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Many of our live-stock men are taking advantage of the new "stock-raising homestead law," and securing 640 acres of grazing land. The law permits the entry of 640 acres of non-irrigable, non-timbered land, chiefly valuable for grazing and raising forage crops by any qualified entry man. The entryman must reside upon the land not less than three years and make certain improvements. Application may be made at the local land office, and the land will be designated by some one from the Interior Department. One should know the land and be sure of its location before making application. Blank forms and all papers necessary can be secured from the local land office, Federal Building, Salt Lake City, Utah.

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\$35.00

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March 20**



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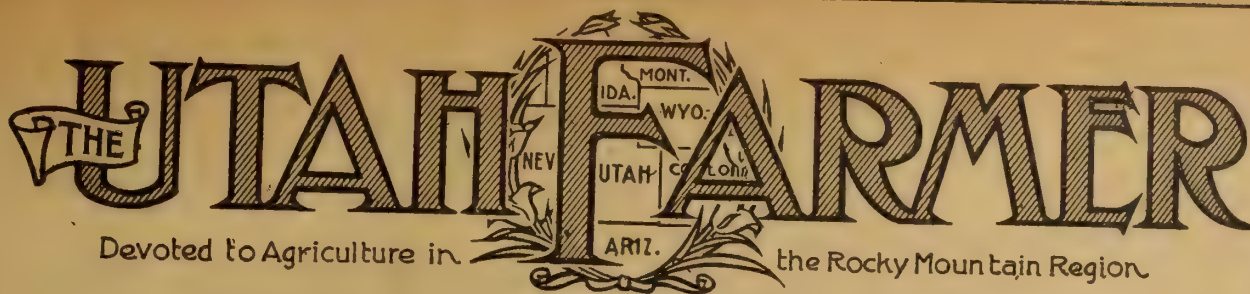
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ONE DOLLAR

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VOLUME XIII.

No. 25

The Use of Outside Activities In Our Schools

By P. J. Sanders, District Agent, Boys' and Girls' Club Work
Salt Lake City Schools.

"It is everywhere recognized that the people are not getting value received for the money spent in the education of their children under the present system." Any person who would make such a statement as this has either a very high estimate of the value of a dollar or a very low estimate of the real value of the work done in the schools of today. But that greater values should and can be received in return for money expended, there is no doubt.

Men and women everywhere realize the school is not giving to the home that needed assistance they feel is due it. Instead of the school contributing its share to the home, it is heaping burdens upon it. Mary's Geography and John's problems prevent them from giving needed help in the home. Mother has the breakfast to prepare, the dishes to wash, the beds to make and the floors to sweep. The best laboratory in the world is the home—in the home—but Mary's laboratory work is neglected. She spends her time in learning many good things; she studies about many real things, but does not study them; she reads about how to do things, but is seldom found doing them. She intends to wait until she has finished her education; then she will put into practice the thousand and one things she has learned many of which she has systematically forgotten. But what sort of education is that that neglects the doing? To a very great extent it is the education of today.

We have often heard it said that we shall soon look back upon the education of today and wonder why so much of our preparation for life was received within four plain walls. But why stand we here idle? What is it that we wish? That system of which we now feel so proud must be changed so as to include the actual doing of more real things—supervised projects and definite supervised home tasks, for which school credit should be given.

Now that we are fast eliminating the non-essentials, resorting to real language lessons and common words in spelling and other reforms, seems a very fitting time for the introduction of outside activities that will help the home and correlate with the book work of the school and add many times to its efficiency. As Supt. each of Olympia says: "The child should have home work assigned to him, but it should be work pertaining to the home and not pertaining to the school. The public must see to it that the things that the boy learns in school are the things that he will use

when he becomes a man. The course of study should be flexible enough to fit itself to the needs of the community and it is necessary for the community to see that the schools responds to this need. One of the most important factors in the formation of strong and good character is responsibility, and the child should early be given tasks to be performed regularly and he should assume the responsibility for the prompt and efficient performance of these. Instead of asking the student to solve ten problems in arithmetic we shall, at no distant date, suggest to him that he shall look after a pig or calf, that he curry a horse or milk a cow, that he build the kitchen fire and split enough wood to last through the day, and I believe that these will develop as much sound character and perhaps more originality and initiative than will the solving of a given number of problems in arithmetic."

One teacher in assigning ten problems in his class for the following day said: "Tomorrow I am going to give you ten problems. Five will be in the book and five will be out of the book. The five out of the book will be: (1) Help get supper tonight; (2) help do the supper dishes; (3) help get breakfast; (4) sweep a floor; (5) make a bed. I also gave certain duties to the boys. The next morning I was delighted to see the eagerness with which they responded; they had worked the given problems in the book and the five problems out of the book. The tasks were changed during the year. We had at different times given credit for home work, the same as for school work. During a discussion at an institute meeting, a very good principal asked me, "If we give credit in arithmetic for home duties, what will become of the arithmetic." I never have been able to answer his question. Once I was arguing with the residents of a small district that I wished would consolidate with another district. A man rose and said he believed in consolidation in general, but this particular district had the graveyard deeded to it. If this district's identity was lost in consolidation, what would become of the graveyard?

What appeals to me as being the most important and successful undertaking in connecting outside activities with the elementary schools, was instituted by the U. S. Department of Agriculture a few years ago. The Government is co-operating with the agricultural colleges and school boards throughout the country. Every boy

(Continued on page 14)

Year's Results of Idaho's Cow-Testing Association

W. E. Meyer, Western Office, Dairy Division, Salt Lake City, Utah.

Down in the southwest corner of Idaho there lies a farming tract that, through the magic of the conserved water of the Snake River, is fast becoming one of the best agricultural sections of the West. A barren sage brush waste known as the home of the jack rabbit and sage hen until 1904, it has during the past 12 years, by means of irrigation, become the home of progressive farmers who are setting wonderful examples for western agriculture.

With them has come the alfalfa, the corn the silo and the dairy cow. Dairying is and will always be one of the main sources of income for the farmers of the Twin Falls Tract. With the rapid growth of dairying near Buhl, and the large importation of well-bred stock from the east, dairymen there saw the need of some business-like way of discovering the good and poor cows in their herds. With this idea in mind, in the early fall of 1915 they organized the Buhl Pioneer Cow-Testing Association of Idaho. It was the first association in the State, and also the first association organized in the States covered by the Western Office of the Dairy Division on the \$1.50 per cow plan that was entirely self-supporting. Approximately 550 cows were subscribed.

The association when organized took advantage of County Agent Birch's office, and in October, 1915, started work with Mr. O. T. Koster of the Idaho Agricultural College as tester. Mr. Koster's work has been very gratifying from a co-operative as well as commercial view point to the Buhl dairying—in fact, to such an extent that this year these men took one step in advance of any other cow-testing association in the United States. Of the 27 dairymen in the first year's work, 25 remained in the association and signed a contract pledging their herds for a period of three years. Thus far cow-testing associations had been organized for a one-year period.

What has the Buhl Pioneer Cow-Testing Association accomplished? A better spirit of co-operation prevails among the dairymen. Many of the men there now find time to do their farm work and attend a cow-testing association meeting to discuss dairy problems. It pays them. Each member knows exactly what each of his cows produced. At the local sales this fall dairymen no longer bought by guess, but bought by test. Mr. M. P. Dan, a member of the association who held a \$5,000 sale in November, says:

"The thirty dollars I invested in the cow-testing association yielded me a return of \$1,000. Every cow was pur-

chased according to her butterfat production for the year. The prices varied according to her record and not according to her appearances. It is also interesting to know that over half of my herd was sold to members of the cow-testing association. Sales of untested cows have been held this fall—herds that were fully as well bred as mind sold for 30 or 40 per cent less. My neighbors exhibit the Missouri "Show me" spirit when they buy cows."

The saving of butterfat in the skim milk alone was sufficient to pay Mr. Koster's salary for the year. The average for skim milk tests in October, 1915, were .243 per cent; in September, 1916, they were .020 per cent. There were 21 separators in the association. These skimmed an average of 4500 pounds daily. The actual loss would have been 10.03 pounds butterfat daily. At 27.4 cents per pound this means a daily loss of \$2.74, or by a readjustment of the separators the tester was able to save the member \$1,000 for the year.

That cow-testing associations are convincing argument for pure-bred stock is shown by the fact that seven pure-bred sires and 14 pure-bred females were purchased during the year by members of the association.

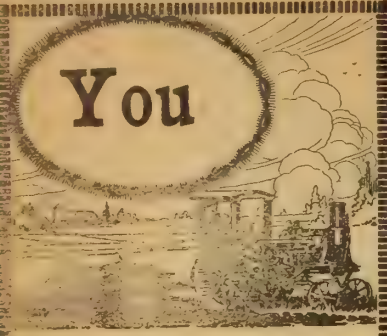
Association Averages.

Number of cows	473
Pounds butterfat	304.6
Pounds milk	8087
Average test	3.76%
Returns per cow	\$83.21
Cost of feed per cow	\$43.69
Profit per cow	\$39.52
Return per \$1 expended for feed	\$1.90
Cost per pound butterfat	\$0.143
Cost per 100 pounds milk	\$0.537

The above table is an interesting one, and worthy of study. It shows that the members of the Buhl Pioneer Cow-Testing Association are receiving a return of 190 per cent on every dollar invested for feed, considering of course that the calf, skim milk and manure pay for upkeep of buildings and care of the stock. In many cases where the better bred stock is being kept the calf pays these costs many times over.

Professor E. V. Ellington of the Dairy Department at Moscow states that the average butterfat production for the state of Idaho is approximately 160 pounds per cow. The herds of members of this association have an average butterfat production of 306.4 pounds per cow. The cows in this association produced 146.4 pounds of butterfat more than the average cow of Idaho, or at the average price of

(Continued on page 7)



You

You should have a successful Avery "Light Weight" tractor. You need it to keep your land well cultivated and make money out of your farm. 5 sizes, one to suit your farm. Write us for further particulars.

Wholesale Dealers for Intermountain States
LANDES COMPANY
 Modern Machinery
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HOLSTEIN CATTLE
 Purebred Registered
 Send for Free Illustrated Booklets. The Holstein-Friesian Association of America, Box 273, Brattleboro, Vt.

Mention Utah Farmer when you write.

If you want money, drop us a line.

We loan on first mortgages on Utah farms or Salt Lake City real estate at reasonable rates.

Prompt action and fair treatment if you do business with us.

Palmer Bond & Mortgage Co.

WALKER BANK BUILDING
 SALT LAKE CITY

While money is plentiful is a good time to save.

Crops may not always be so good, metals so high and business so active. Put some money away in a savings account NOW.

Walker Brothers Bankers

SALT LAKE CITY.



Dairying

OWN GOOD COWS
 Ben R. Eldredge.

"How many throughout this state today are milking cattle that have no dairy ability, cattle that are descended within a few generations from beef ancestry, and probably mixed with range blood with no disposition toward milk production further than sufficient to partly feed a calf. This is a class of cows whose milk product for a year in a dairy would reach about 3500 pounds, produced under the conditions where the price of 4500 pounds of their product could not pay for the feed consumed and the care and labor attending its production. The same feed and the same care expended on cattle whose product would be 7000 pounds of milk per annum would reduce the cost of that product to the point where satisfactory profit could be returned. So we see how important it is that we dairy with the right kind of cattle. I fix the cost of taking care of a cow and feeding her properly for one year at about the price of 600 pounds of milk. (Figuring this milk at State standard for butter fat which is 3.2 per cent). In some economically managed herds a cow that produces less than that amount is marked for early slaughter. But take those figures and let us consider them for a moment. Suppose we have two cows, whose products is 6500 pounds each. The two together will give us a net profit to the value of one thousand pounds of milk per annum. Now take a cow whose yield will be 7000 pounds with the same proportionate cost for keep and feed, or the value of 6000 pounds of milk, and her profit will be 1000 pounds of milk which would just equal the profit from the other two combined, and this production occurs with less risk with only one cow to provide shelter for and with other contingent expenses in proportion. We make a profit equal to what is made on the other two. Then under feed and expense conditions outlined above why isn't a cow that will yield 700 pounds of milk worth two whose yield is 6500 pounds? Some will say: "But, there is the carcass to be taken into consideration when those cows are sold for beef." But we are not feeding them for beef, we are feeding them for milk. Do not forget that milking has to be done about six hundred times a year for from five to six years, approximately the average length of time that a cow is useful in the dairy. The trouble with many of our farmers in their dairy operations is that they can't get away from the beef notion. Before we can ever successfully do a dairy business we must work with dairy ideas, with dairy equipment and with dairy cows."

NEED OF BUSINESS METHODS
 To Develop a Creamery to Its Greatest Usefulness and Success.

Good business men realize the necessity of striving for new business. They understand that if the business is increased in volume the overhead and running expenses will be proportionately lessened. Experience has taught them that they must attract the attention of the buyer and they therefore spend thousands of dollars annually in advertising their business and in placing traveling

salesmen in the field. If such methods were not proving to be profitable they would be discontinued, but we see greater expenditures along this line each year. This serves to prove that time and money spent toward the enlarging of a business are economic expenditures.

Creamery operation is a business enterprise and efforts properly directed toward increasing the patronage and enlarging the business usually bring results commensurate with the time and money expended.

At the ideal co-operative creamery, where every cream producer in the community is imbued with the spirit of true co-operation, the cream is brought to the creamery without having been solicited. Creameries and communities of this kind, however are extremely rare. In the territory tributary to the vast majority of creameries are many farmers who ship their cream, make dairy butter, or do not engage in dairying at all. These farmers are all potential patrons of the local creamery, and an enterprising man, by calling on them and explaining the many advantages of patronizing the local industry, may be able materially to increase the creamery's business.

A systematic soliciting for patronage usually yields the best results in the spring of the year. Spring cows are coming fresh and pastures are in good condition. The farmer who has a few cows and who has had no cream to sell during the winter, is then seeking a market for a quantity of milk, cream or butter. If he is induced to become a creamery patron he may find it so profitable that he will increase his herd and furnish cream to the creamery throughout the year. There is then a surplus of dairy butter on the local markets, and the price is low. The manufacturers of this butter, perhaps, can be shown that



Vega Cream Separator

Clean skimming of quality promised. Easily cleaned—sanitary. Light turning, simplicity durability, low cost of upkeep.

A demonstration will convince you. A trial will satisfy you. A few months use will pay you.

SIZES

Model E, capacity 150 lbs.

Model F, capacity 300 lbs.

Model G, capacity 450 lbs.

Model L, capacity 600 lbs.

Model M, capacity 900 lbs.

A careful examination and test of the VEGA will convince you that it is the most perfect separator of today, and the biggest value ever offered in a separator.

PRICE THAT IS RIGHT

Call, write or Phone for latest catalogue.
CONSOLIDATED WAGON & MACHINE CO.



She's The Money Cow

She makes use of every ounce of feed. Her milk is the richest of all the breeds in butter fat and solids. She is rugged and vigorous—will thrive in any climate. She milks steadily. She is beautiful and gentle. She's the mortgage lifter. She's the cow for the everyday farmer, yet she's the rich man's pride, too. And she's the cow for the family.

Our free book, "About Jersey Cattle," proves these things. Send for it now—a postal will do—it's interesting and instructive.

The American Jersey Cattle Club
 387 West 23rd Street - New York City

DO YOU GET THE BEST VALUE

For your money when you buy your

L. D. S. Garments

Buy them direct from the factory. It saves you money and you get the new—fresh stock at all times.

SALE LAKE WOOLEN MILLS CO.

50-52-54 Post Office Place
 Salt Lake City, Utah.

When you answer advertisements, mention the Utah Farmer.

selling the cream to the creamery is more profitable than churning at home. The man who does not milk cows should not be overlooked either; the advantages of receiving the monthly or weekly cream check may prove to be strong arguments.

Let the creamery company then send a man out to call upon the patrons and prospective patrons and talk business to them. It will result in a better understanding between producer and manufacturer and will be to their mutual benefit.

KEEPING POOR COWS

It is strange with what tenacity the average dairyman hangs on to his poor cows. It is generally true that in the average herd about one-third of the cows do not pay their feed bills; another third about pay their way but make no profit, while the other third are profitable.

This being true, the average dairyman would be better off with one-third the cows he is now caring for and milking. Only the average dairyman can see the economy of milking cows that make no money or even cause a loss, but he will tell you he just must have the milk, that he can look after a large herd more economically than a small one, and a lot of similar fallacies. He cannot attend to a large herd of cows, one-third of which are unprofitable, as economically as he could the one-third which

alone make any money; but he is generally dead set in his refusal to get rid of the poor cows. In fact, his fondness for keeping cows which will not pay their keep is strange, beyond understanding.

The dairyman who does not weigh the milk and keep a record of each cow's production is in about the same position as would be the merchant who didn't keep books. It must be that these dairymen don't believe that there are cows in their herds that are not paying their keep, but in that case the results are not altered, the unbelievers pay the penalty just the same. —Progressive Farmer.

GAS IN SILOS DANGEROUS

Death lurks in the carbon dioxide gas formed when silage passes through the process of fermentation, especially in pit silos.

Carbon dioxide is transparent, heavier than air, flows over the ground like water, and collects in low places. Pit silos are very dangerous during the first few weeks after filling. After starting to put in the corn, one should never enter a pit silo without testing for gas by lowering a lighted lantern. If the flame goes out, gas is present. Remove this by means of air currents.

WASHING WOOLEN CLOTHES

Strong alkali in the wash water, quick changes of temperature, and rubbing cause woolen fabrics to become hard, says the home economics extension service of the university college of agriculture, Lincoln.

This is because wool fibers are covered with scales which interlock readily. Avoid hot water, strong soaps, and strong washing powders; rinse garments in warm water; do not hang clothes out of doors on a cold day; and avoid hot irons if you would be successful in the art of laundering woollens.

ALFALFA AS A CAUSE OF STERILITY IN COWS

It appears to be the popular opinion that the exclusive feeding of alfalfa to milk cows has a tendency to sterility. Haring has investigated this subject and finds no evidence to suspect alfalfa of being the cause of sterility. The data already on hand show proportionately less sterility in dairy cattle fed exclusively on alfalfa than in those fed partly on alfalfa or in those receiving no alfalfa at all.

Don't let anyone move the cows faster than a comfortable walk on the way to or from the pasture.

COLD WEATHER HINTS FOR AUTOISTS

If a water-cooled engine is not carefully guarded in cold weather and the water is allowed to freeze in any part of the system, pipes or radiator will break or a water jacket will crack.

When leaving the car for the night or for a long time during the day, the safest plan is to drain the water out of all parts of the system. The engine may then be allowed to run for a few minutes to make sure that all the water has been removed. If the car is used a great deal in cold weather, it may be advisable to use a non-freezing solution. A mixture of denatured alcohol and water has proved good for this purpose. A mixture containing 20 per cent of alcohol will freeze at 10 degrees above zero; a 30 per cent solution will freeze at 5 below; 40 per cent solution at 20 below; and 50 per cent solution at 35 below.

The Tractor You Can Afford to Buy

If you are supporting from four to six horses in idleness nine months of the year, giving up 20 to 30 acres of your land to raise horse feed instead of marketable crops, you know what this means.

Moline-Universal Tractor

Does all the field work, including the cultivating and harvesting. Belt power up to 12 h. p. It plows deep, at the right time—in half the time.

Has the pulling power of five horses, the working capacity of seven because of greater speed and endurance, and eats only when it works.

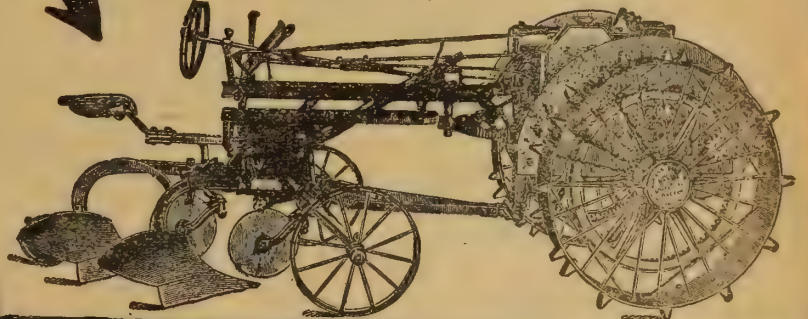
Strictly a one-man machine—drives easier than a team from the seat of the implement pulled.

A proven success. Backed by a \$19,000,000 concern with 51 years satisfactory service to the farmers of America.

Write for free illustrated literature and name of nearest Moline Dealer.

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SALT LAKE CITY, UTAH

THE MOLINE LINE INCLUDES
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NO DELAYS

WHEN YOU SEND THEM TO US

Our modern Shoe Repairing plants are thoroughly equipped to handle your work in the quickest possible manner. With a careful neatness that will surprise you too.

Skilled workmen, Modern machinery and the best of materials—make us able to serve you well.

Parcel Post your repairing to our nearest shop TODAY and note the neatness and despatch in which it is returned to you all carefully repaired.

Royal Shoe Repairing Co.

Salt Lake, Ogden, Logan, Spanish Fork and Richfield.

Mention U. F. when you send shoes.

WANTED

Hay, Grain, Potatoes,
Alfalfa and Sweet
Clover Seeds.

Write us

Vogeler Seed Co.

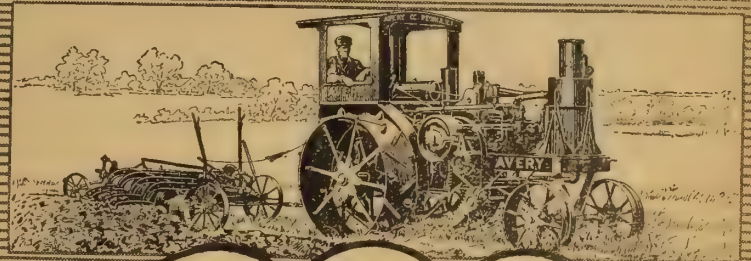
Salt Lake City, Utah.

SHEET MUSIC

Only Ten Cents a Copy

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DAYNES-BEEBE MUSIC CO., Salt Lake



The Only Standardized Tractor Design

Avery Tractors are the only make built in five sizes (a size for every size farm) all having exactly the same design. There is practically no other make of tractors where there are more than two sizes of the same design.

When the Avery Company builds one size tractor and after thoroughly testing it out, builds another size, and then another, and then another, until it has five sizes of all exactly the same design, it is unquestionable proof of the success of that design.

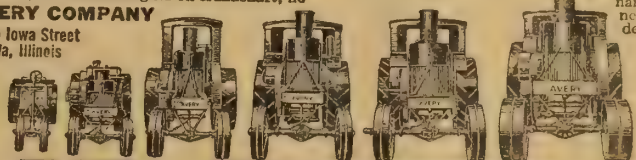
Genuine Kerosene Burners

Opposed motor, strong crankshaft, renewable inner cylinder walls, patented sliding frame, all spur gear transmission, no intermediate gear or shaft, no counterweights on crankshaft, no

AVERY COMPANY

2550 Iowa Street
Peoria, Illinois

water pump, no fuel pump, no fan, no mechanical lubricator, no belts, no sprocket chains. Regular sizes—8-16, 12-25, 18-30, 25-50 or 40-80 h.p. and special 5-10 h.p. There's a size Avery Tractor and Plow to fit every size farm and a size Avery Thresher to fit every size run. The Avery Company has its own Branch Houses at convenient points, large repair stocks and force of trained service men to serve owners of Avery Tractors. Write for a free copy of the new 1917 Avery Catalog and name of nearest dealer.



AVERY

Tractors and Plows—6 Sizes—Fit Any Size Farm



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Deseret Farmer and Rocky Mountain Farming
Established - - - - - 1904

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LEHI UTAH.

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Our office at Salt Lake City, Utah,
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address, subscribers should be sure to give their
former as well as their present address, otherwise the
address cannot be changed. This is a matter of im-
portance to you and to us.

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Utah Horticultural Society, Utah State Dairymen's
Association, Utah State Bee Keepers' Association
Bear River Valley Farmers' Protective and Commercial
Association, Agricultural College Extension Depart-
ment and Utah State Fair Association, Utah-Idaho
Millers' and Grain Dealers' Association, Utah Fruit
Growers Association.

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We guarantee every subscriber against loss thru dis-
honesty or attempted swindle by any advertiser in
this publication. We do not attempt, however, to
adjust trifling differences between the subscribers and
honest responsible advertisers, nor will we pay the
debts of honest bankrupts. Notice of complaint
must be sent us within thirty days from date of the
transaction, and the subscriber must have mentioned
Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent
upon application.

It is the breeder who produces the kind of
animal the other fellow cannot afford to be with-
out who is most successful. And there is always
a good market for just such an animal.

Not all failures in poultry keeping can be
traced to the hens. Often it is the owner who
lays around too much, not willing to follow up
all the little details necessary for the success of
the business.

What does a farmer want to keep untested
cows for? In the same herd of farmer cows will
be one found by testing to produce but 150 pounds
or less of butter fat in a year, while another may
produce over three times as much during the
same year. It cost so little and the information
so valuable that every one should test their cows.
Find out what they really give you. A pair of
scales and Babcock tester will tell you.

Has your boy or girl made arrangements to
feed a pig or two this year? We have had several
articles explaining how any boy or girl will be
furnished with a bred sow to care for and feed
this year. This is a good way to interest the
young folks in live-stock. In some places they
are forming calf clubs, this is also a good way
of helping to increase the live-stock or dairy
cows in our state. Now is the time to make your
plans for the year 1917. If there are any boys
or girls who can not secure some pigs for feed-
ing we suggest they write to the Utah Farmer and
we will try and see that they get some.

It is possible for every farmer to become fam-
ed for some particular product, be it apples, pota-
toes, eggs, or cheese. There is endless opportu-
nity. Long ago it was said "a wise man will make
more opportunities than he finds." Choose some
line you like the best, and for which your farm
and surrounding are best adapted, and then excell
in that product.

WHY SUCH WASTE IN MACHINERY

The other day as we were traveling through
one of the prosperous counties of Utah we noticed
a number of valuable pieces of farm machinery
standing out half covered with snow. The owner
—for probably there was an owner—seemed to
be not at all concerned about the rapid de-
preciation in the machinery. It seems almost a
crime when machinery costs so much to see it
thus shamefully neglected.

DIVERSITY PAYS.

It is not always a safe proposition to put all
your eggs in one basket. Probably one year you
may make a great success raising one certain
crop if conditions are favorable but the next may
mean a loss to you. Mixed farming insures
against heavy loss by distributing the risk among
several crops. Another advantage of diversified
farming, it gives you a chance to utilize your
labor at all seasons of the year.

To plan your farming so that you can work it
with the least possible help is also another
advantage. Take it one year after another
diversity pays in farming.

LEARN TO SEE.

Every now and then a farm of forty acres
keeps the owner more busily engaged than one of
120. What is the reason. The man on the
smaller plot has learned to see. The larger land
owner may say, "I keep busy all the time," but
that is not the point. The forty-acre man sees
that some of his trees may be saved by trim-
ming off a dead limb here and there, that the in-
stitution of a new tool will pay for itself in one
season in the saving of time and labor, that if
he sows a catch crop it will save buying feed for
a period of time later on and that if he stops to
find out why part of his orchard did not bear, he
will double his crop next year. Now if the 120
acre man could do this he would be as success-
ful as the other man and three times better off.

WORTH MUCH—CAN BE GIVEN AWAY.

There is one thing in this world that is worth
much to the one who may possess it and yet the
more he gives away the more he may possess—
it is a smile.

Cheerfulness expressed in a smile is worth
much to every one.

Fortunate is the man who is born with a cheer-
ful spirit, who can see the "silver lining" as soon
as he sees the cloud.

Because people are born without a character-
istic, is no reason why they should travel life's
long lane without it.

The "Sunny Jim" habit can be acquired. It
is surprising how many more men have achieved
cheerfulness than those who find it one of their
God-given possessions.

Once you acquire the trait—here is the
point—don't "bottle up" that cheeriness. The
more you pass it on—arm in arm with kindness
—the more of both you get for yourself.

A smile is worth much to you, give one to
each fellow you meet and your supply will in-
crease.

ARE YOU GOING TO

ONE OF THE ROUND-UPS?

This is the season of the year when farmer's
gatherings are very popular. The Round-Up at
Salina was a success, well attended and much
interest shown in the gathering. Next Monday,
January twenty-second, Ogden will commence her
work of meetings with a number of prominent
speakers. The following week January 29 to
February 3, will be at Logan. The annual
gathering at the Agricultural College is always
well attended. Then comes a Round-Up at
Cedar City, February 15, and so they will con-
tinue during the winter season. Plan to attend
one or more of these gatherings, it will be time
well spent.

In nearly every county of the state there are
large tracts, and small ones too, of land that
should be drained. Now is the time to get to-
gether and discuss plans so as to make this land
productive by having it drained. The state and
government have men who are willing to meet
with land owners and advise with them as to
how the land can best be drained. They will
help you to organize a drainage district where it
is a very large tract of land.

Drainage is no longer an experiment when
properly done. Thousands of acres of water
logged land can be reclaimed by draining it.
The land should be made productive so it will
bring some returns to the owner.

WE WANT OUR MONEY'S WORTH.

Much is being said these days about political
appointments and changes in our state govern-
ment. Now we are not concerned about a man's
political ideas, but we express the opinion of a
great many people when we say we want efficient
men and men who are not afraid to work. Men
who, when they accept the position, will give it
the best effort in him.

Our state officers should give a service like
they would to any big company. They should be
well paid and then require all their time. It is
poor business for the state to allow any officer
to spend half his time looking after other things.

In making these new appointments it should
be made very clear that the people of the state
want their money's worth; they ask no more but
they do want this from now on.

It was said of a state official the other day that
we were paying him \$6,000 a year; his salary is
only \$1,500, but he only spends one fourth of
his time on the job. This is unfair, if he is sup-
posed to spend his time working for the state
and does not do it, he ought to be put out. No
wonder some people want political jobs if this is
the way they do.

To require of every man and woman an efficient
service, will help greatly to reduce the cost of
running our state, which means reducing our
taxes. We want our money's worth and the
sentiment of a great many people is they are go-
ing to try to see that we get it.

It was a very wise act on the part of the
Federal Farm Loan Board to make it definitely
understood that the jobs of running the Federal
Farm Loan Banks are not political "plums," but
the men they will select will be efficient and cap-
able of successfully conducting the banks. It
would seem that the Federal Board stands first,
for the benefit of the farmers and they are work-
ing to that end.

YEAR'S RESULTS OF IDAHO'S COW TESTING ASSOCIATION

(Continued from page 3)

butterfat, 27.4 cents, they returned \$40.11 more than the average in the state. A large proportion of this excess return is net profit, just how much cannot be determined. Nevertheless, if members of this association receive that much in excess of the average cow of the state, when these cows, 377 in number are only the average in a community, is it not time for other dairymen to realize the value of cow-testing associations and organize

associations of this kind in their own territory?

To put it in the terms of Mr. Gustave Kunze, president of the Idaho State Dairymen's Association and of the Buhl Pioneer Cow-Testing Association, "It is time for dairymen to realize that we must stop milking cows just because they are cows, but because they produce butterfat and not only that, but milk only those that produce butterfat at a profit."

Does it pay to feed the dairy cow? Go to the members of this association and every one will tell you "Yes, feed her all the feed she will consume at a profit." Compare the feed cost of the ten highest and the ten lowest cows. True, it cost the difference between \$53.61 and \$40.40, or \$13.21, more to feed these ten high producing cows than it did the ten poorer cows. But for this additional feed these cows returned, according to Mr. Koster's figures, 325.9 pounds of butterfat for this \$13.21, or they gave 23.7 pounds of butterfat for every additional dollar's worth of feed which they consumed in excess of the ten poor cows. Surely there is no better argument than this for better methods of feeding and better cows.

What are the views of some of the members of the association? Mr. John R. Gott, near Twin Falls, says "the fact that we are testing our cows monthly has increased our credit at the local banks, because we who are dairymen are able to show in black and white just what our business is returning."

Mr. Koster, the tester, is a firm believer in the publication of records and the association's activities. He says the local and agricultural papers are giving much help in arousing interest in this important phase of dairying. The publication of the records in local papers does much to arouse friendly rivalry among the members as well as stimulating the interest of other men in the community in this work.

Perhaps there is no agricultural movement today that is giving more aid to the improvement of agricultural conditions than is the County Agent. Twin Falls County has such an agent in the person of Mr. W. W. Birch. Mr. Birch is a firm believer in the cow-testing association movement. He states that the county agent's success depends largely on organizations, and in dairy communities cow-testing should be one of the first steps in the development of that work. Twin Falls County is planning a Farm Bureau, and Mr. Birch states that the cow-testing associations is one of the best of stepping stones to the completion of such an organization.

POULTRY POINTERS

Nels Peterson.

The profits from the lice crop are nil. Lice and chickens cannot be kept together under one roof at a profit. The hen that must feed a thousand lice will furnish no eggs for the family.

It takes art to lay eggs. Chicken yards of clay eventually have the sand thoroughly removed. A constant supply of false hen's teeth in the form of grit and shells must be within easy reach if the chickens are to do well

The cackle is only part of the hen talk related to laying. The singing hen also is apt to be a frequenter of the nest box. A hen will sing when she is happy scratching for a living in bright

well ventilated quarters.

Doctoring a sick chicken, unless a valuable specimen, looks like a waste

of human strength and, time. Precautions that prevent disease, however, can be done by wholesale methods and are most commendable.

Redeem Land by Deep-Drilled Wells!

Armstrong Machines positively handle every kind of formation in any part of the country!



One man can handle entire outfit. Perfected machine of one half century's experience.

\$50.00 to \$75.00 profits a day made on an Armstrong Outfit. A few hundred dollars invested in an Armstrong Outfit will redeem several thousands of acres in a single season. Drill any formation, any depth, any place. Gasoline or Steam, Walking Beam, Spudding or Combination Outfits. Write for Free Illustrated Book. Explains everything about well drilling and oil engines.

LANDES & COMPANY WESTERN DEALERS, Salt Lake City, Utah

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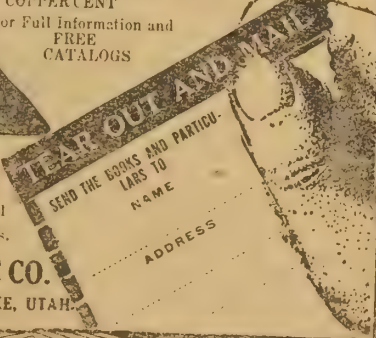
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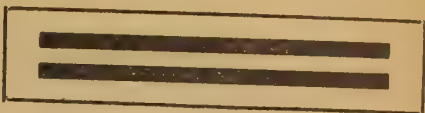


Partial View of Ogden Union Stock Yard

Heavy Buying by Packers, Feeders
Central Location Provides Access
For Additional Information

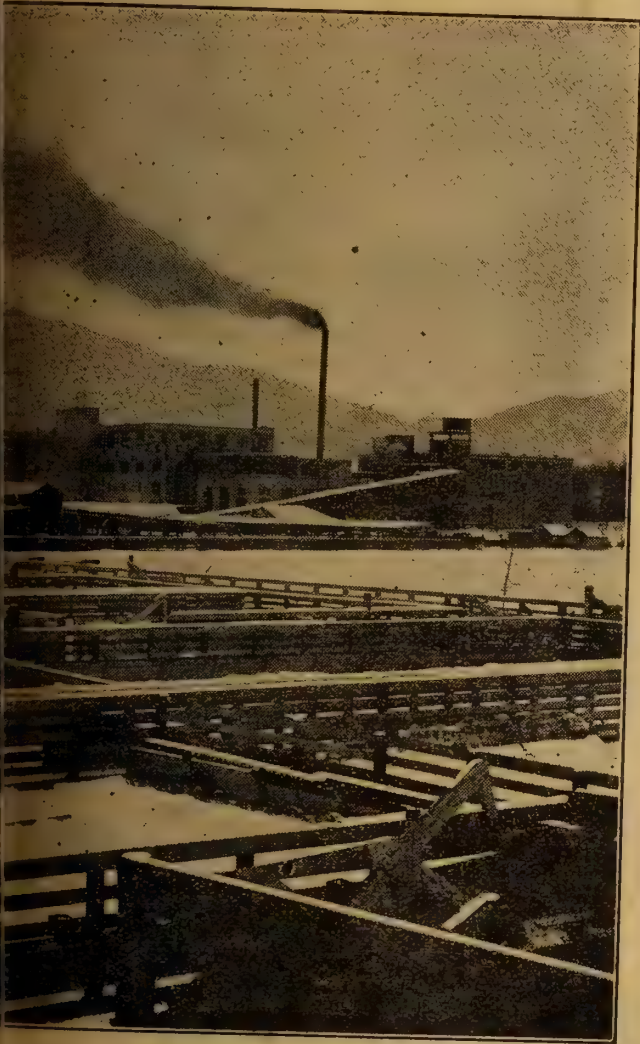
OGDEN UNION STOCK YARD
Largest Stock Yards of The West

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great steam railroads and two large electric railroads will soon be the greatest market in the Western States, but offers also the opportunity further on the same shipping bill, in any direction

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Most Central Stock Yards of The West

Live Stock

GOOD MONEY IN HOGS.

A. D. M'Gillvary.

In order to make money in hogs we must be able to keep the pigs in good healthy condition, so that they will grow and thrive from the time they come until they are put on the market. This is the keynote: Snove them through from start to finish. If we are not able to do this we are working at a loss. In the first place we must be equiped with some good place for the mother at farrowing time, as the loss of our young pigs is one of our greatest drawbacks. For the ordinary breeder I think the individual farrowing houses are the best, as they are inexpensive and can be placed wherever desired. I use them and find them very satisfactory. About a week before the sow is due to farrow I place her in a yard with one of these houses so that she will become settled and accustomed to the place. At farrowing time I remove all the bedding except enough fine straw to cover the floor, for if she has a lot of straw she will make a nest like a hen which is not good for the little pigs to climb over, and when they snuggle around her and when she moves they are likely to get under her with no chance of escape. If there is only a small amount of bedding the pigs can get around over it better and thus reduce the loss. After farrowing I feed the sow nothing for twenty-four hours, but give a drink of warm water, then in twenty-four hours I give a thin slop of bran and warm water. Then feed lightly, mostly bran for the first week, and gradually increase the quantity until the pigs are three weeks old when the mother is back on full rations. As soon as the pigs begin to come to the trough looking for something to eat, fix a place so they can get in but the mother cannot and feed them twice a day all they will clean up. First give milk and a little shorts, increasing the latter and I add about one-seventh or one-eighth of seelcted tankage. When the pigs are from ten weeks to three months old I take the sow to another fields and the pigs never realize that they have been weaned. Right here is where a great mahy make a mistake. They wean the pigs at about six weeks old when they are just learning to eat and as a result the growth is stopped to some extent and it requires some time to regain the loss. After the pigs are weaned at three months, put them on alfalfa pasture with about one-half rations of grain for three months or so, then take them up and give the grain for sixty days and then market them. They ought to weigh from 280 to 300 pounds at eight or nine months. I will give some figures to show that this can be done: On October 29th of last year I put up two barrows to fatten. They weighted 327 pounds. On December 27th they weighed 528 pounds, making a gain in fifty-eight days of 201 pounds. On January 23rd I sold them and they weighed 590 pounds, making a gain of 263 pounds in eighty-three days or a little over three pounds each day. Their age when sold was eight months and twelve days. I also have pigs six months old the twelfth of February that weigh from 165 to 190 pounds and others that were three months the fifth and eleventh of February that weigh from fifty-five to seventy-five pounds. I do not give these figures

to boast, but to show what can be done and what any farmer can do if he tries. Someone will say that it will require too much feed to do this, but will it take any more feed to make a 300-pound hog at eight or nine months than at a year old? It takes just so much feed to keep a pig alive and if fed only that much the feeding is done at a loss, so it is cheaper to feed to make as much gain as possible and get them to market early, but with good weight. In my judgment we cannot make much money unless we have good pasture to run the stock on in summer and feed plenty of alfalfa in winter, and it is in this particular that the majority of farmers are making a mistake. They try to raise hogs without any pasture or range whatever, but keep them in small pens from the time they come until they are put on the market. They do not feed enough to keep them in good condition and the consequence is that they have pigs that at five or six months old will not weigh seventy-five pounds, and I have seen shoats that would not weigh fifty pounds at that age and then they will complain that there is no money in hogs. Why, bless you, of course there is not, but if you have the pasture—and there is no need of anyone being without it—and the barley and other grain that we can grow, I believe we can compete with any of the corn-growing states, but we must not keep them penned up until we get ready to fatten them for market. I put my mature hogs in the pasture about May first and keep them there without any grain for fully three months and they come out in good breeding condition, but we can not do it with growing pigs. They must have some grain in connection with the alfalfa pasture to make the gain that we must have. Give the growing stock plenty of range, keep them healthy and growing right along and before you hardly realize it you have a 300-pound hog to send to market, and you will find that you have received a better price for your grain.

PROFITS FROM SHEEP

AFFECTED BY WINTER CARE.

The winter care of the flock is just as important as the careful cultivation of the corn crop. This is the growing season of the lamb crop to be harvested in the spring.

The condition or amount of flesh the ewes are carrying must guide the feeder. Ewes in good condition need not be fed grain until about a month before lambing, when they should gradually be accustomed to grain. Ewes in thin or poor condition should receive from one-fourth to one-half a pound of grain a day. Straight corn is not the best grain ration. The grain feed should contain some of the blood and muscle building material. A ration of 6 parts corn; 3 parts wheat bran; 1 part linseed oil cake; by weight, has been proved very satisfactory. A ration of equal parts by weight of corn, oats, and bran is good.

The sheep should receive as much clover or alfalfa hay as they will eat. The amount of hay eaten can be cut down by use of corn silage or corn stover. Two pounds of clean, sweet corn silage can be used to replace about one pound of hay. Well-cured corn stover is also relished by the ewes. Ordinarily there is little danger of the sheep eating too much of it if hay is fed once a day. The greatest danger of corn stover comes from making it the exclusive feed. Under this

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Seven Miles Carrying a Hot Iron!

It is a conservative estimate that in ironing the weekly wash for an average family a woman walks seven miles a year between the ironing board and stove.

Think of it—seven miles a year — when a very small expenditure for an

ELECTRIC IRON

will save you all those steps, and the heat and work and drudgery from the old-style sad iron. An electric iron furnishes its own heat and stays hot until the ironing is finished. If you use an electric iron you don't have to leave the ironing board and you can work wherever there is a lamp socket handy.

Buy your electric iron NOW!

The price of a six-pound household iron is \$4.00 at present. On February 1st the price goes up to \$4.50; you save money in buying NOW.

UTAH POWER & LIGHT CO.

"Efficient Public Service"

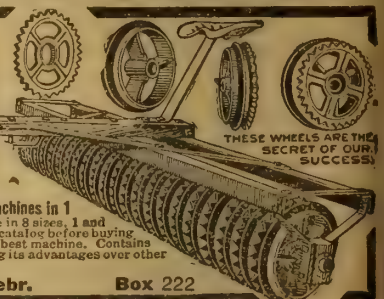
WHEAT, ALFALFA

and other grains yield more where a perfect seed bed is prepared. The Western pulverizes, packs and mulches—makes a perfect seed bed at one operation. Saves seed, time and horse power. Is especially adapted for breaking crust on winter wheat or other grain or in orchards after irrigation or packing rains. It forms the hardest crust into a granular mulch without hurting the grain, and prevents evaporation.

Western Pulverizer, Packer and Mulcher 3 Machines in 1 made in 8 sizes, 1 and 3 sections, prices \$20 and up. We want every farmer to have our free catalog before buying a roller or packer. It proves we can save you money and have far the best machine. Contains full description, price list to you, letters from many farmers proving its advantages over other makes, and much other valuable information. Send for it today.

WESTERN LAND ROLLER CO., Hastings, Nebr.

Box 222



condition, compaction with other attendant troubles will often result.

Clean salt and water should be kept before the flock always, and the sheep should always have a dry, well-bedded floor to lie on.

The sheep should all be able to eat at the same time without crowding.—Howard Hackedorn.

BAND INSTRUMENTS

World's best. Mention this magazine and ask for catalog, terms and 6-day trial offer.

DAYNES-BEEBE MUSIC CO.
SALT LAKE CITY



Mention Utah Farmer when you write.

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GOOD AS CAN BE GROWN
Prices Below All Others

I will give a lot of new
sorts free with every order
I fill. Buy and test. Return
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Over 700 illustrations of vege-
tables and flowers. Send yours
and your neighbors' addresses.
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WRITE QUICK SPECIAL OFFER
Nests won't cost you 1c
Your hens will
pay for them
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Lice-Proof Nests
are wonderful sanitary
for fast a lifetime. Satis-
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The illustration shows
our leader—5 Nest Set.
Cost less than Wood Nests. 25000 in use.
Don't Wait, Make Big Money on Poultry. Write
Nusson Mfg. Co., Box 125, St. Joseph, Mo.

ABSORBINE

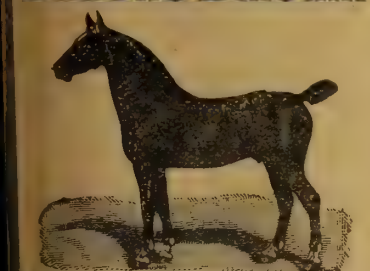
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Lymphangitis, Poll Evil, Fistula,
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and allays pain. Heals Sores, Cuts,
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SAFE ANTISEPTIC AND GERMICIDE

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Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeney, Capped Hock,
Strained Tendons, Founder, Wind,
Puffs, and all lameness from Spavin,
Ringbone and other bony tumors.
Cures all skin diseases or Parasites,
Thrush, Diphtheria. Removes all
Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism,
Sprains, Sore Throat, etc., it is invaluable.
Every bottle of Caustic Balsam sold is
warranted to give satisfaction. Price \$1.50
per bottle. Sold by druggists, or sent by ex-
press, charges paid, with full directions for
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VIOLINS

Mandolins, Guitars and all
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Mention this magazine and
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Daynes-Beebe Music Co. LAKE

Farm Mechanics Dept.

WINTER CARE OF GAS ENGINES.

J. M. Woodhouse.

The winter care of gas engines is
not so much different from the care
at any other time of the year, but it
must be exercised more rigorously.
We all know that the engine should
be drained before leaving in the win-
ter and such is the case in the sum-
mer, if it is to be left for any length
of time. If the engine is out in the
cold it is well to drain it just before
being stopped. In so doing the heat
from the running engine will dry all
the valves, thus insuring them against
damage by frost. Some argue that
draining the engine while it is hot is
detrimental, but if your engine is
out in the cold it never gets hot
enough to be damaged by being drain-
ed immediately on being stopped or
just before. Unless it is an engine
in which the water recedes from the
cylinder as soon as the engine is
stopped, then the water reservoir is
so far from the engine that it does
not make any difference as the heat
reaches the valves only through the
water.

The most important thing at all
times of the year is the oiling of the
engine. This is more important in the
winter than summer; not that it
should be looked after more, but
more care must be exercised in the
choice of oils for winter use. An oil
should be chosen that will run well
when it is cold and still have body
when it is hot. An oil of this de-
scription will cost you more than the
ordinary oil, but the increased effi-
ciency will more than pay the differ-
ence in price. There are several rea-
sons why this is the case and the
most important one is that the oil
must get into the bearings when the
engine is started and not wait until
it warms up enough to make the oil
run. More care must be exercised
where the gravity feed oilers are used
on the engine, than where the pump
is used.

The oiling system should be in-
spected quite frequently to be sure
that every part of it is working cor-
rectly. Gravity feed oilers should be
watched very carefully during the
winter months to be sure that the
feed pipe is not clogged up with cold
oil or by water being frozen in it. An
ounce of prevention is worth a pound
of cure.

Be sure to see that all places where
there is any danger of water pocket-
ing, is drained, not that it will burst
but it will stop the circulation when
you start up next time.

Be sure that there is no water froze
in the circulation pump before you
start up. It may cause damage which
an instant will save.

If you have trouble in starting, heat
a little oil and pour in the priming
cups and then a little gasoline in on
top of it. This will be found to help
in starting when every thing else
fails.

If your engine has not an exhaust-
heated intake manifold, have one put
on for cold weather running. It only
costs a small amount to have the
tinner do it and it will save dollars in
fuel

Parsnips, carrots and other root
crops are easily dug if a furrow of
soil is thrown away from the plants.
They can then be pulled sideways.



Buy Beet Land in Cache Valley

RICHLAND ACRES has 2800 acres of beet and dairy land
that is tile drained and irrigated, all within three to
five miles of Logan, Utah.

LIVE IN COMFORT where there are flowing wells to be
piped into the home, electric lights and power, tele-
phones, rural free delivery, the best of public schools.

OWN A FARM IN RICHLAND ACRES.

YOU HAVE TEN YEARS TO PAY AT 6%.

For information write to

Logan Land and Drainage Company

LOGAN, UTAH.

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HERE'S A TIP FOR YOU
We can secure for you, without
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book of BARN PLANS, 112 pages of
the most practical barn plans ever
published. Treats every phase of modern barn construc-
tion. Shows plans for more than 75 barns, with estimat-
ed cost of each. Shall we order a copy for YOU?

AND HERE'S ANOTHER
We handle the complete line of Loudens Sanitary Barn Equipment,
including Steel Stalls and Stanchions, Hay Tools, Litter and
Feed Carriers, Door Hangers, "Everything for the Barn."
We want to show you these time and labor savers. They are
the best you can buy and the cheapest in the end. Let us quote
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When a housewife orders sugar it is understood that she means "Utah-Idaho" Sugar.

Every housewife has used this perfect sugar and has, after testing it, found it to be the utmost in purity, sweetness and quality. Not only housewives, but noted chemists as well, say that this sugar has no superior.

Be doubly sure of getting Utah-Idaho Sugar. Order it by name.

UTAH-IDAHO SUGAR
ABSOLUTELY PURE

YOU ARE GOING TO BUY THAT FARM THIS SPRING

That you have looked forward to so many years.

Look at this exceptional buy before you make your selection.

Space does not permit us to tell of the many things that must be seen to be appreciated.

50 acres of very fertile land at Elberta, Utah. Raises all crops successfully.

Within short distance of two good mining camps. Good market for all garden truck.

On railroad giving excellent facilities.

Prior water right at \$1.00 per acre if used.

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W. C. ALBERTSON
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When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

HOME

SCALLOPED EGGS.

Scalloped eggs form a delicious dish for the housewife who is trying to lessen the quantity of meat in the spring time diet. This recipe is given in a correspondence study course offered by the University of Wisconsin Extension division:

6 hard coked eggs, $\frac{3}{4}$ cup chopped ham, $\frac{1}{4}$ cup buttered cracker crumbs, $\frac{1}{2}$ teaspoon salt, 2 tablespoons butter, $1\frac{1}{2}$ tablespoon flour, 1 cup scalded milk, few grains pepper.

Melt the butter, add the flour mixed with the seasonings, and when mixed smooth add gradually the scalded milk. Cook until smooth and glossy. Chop the hard-cooked eggs. Sprinkle the bottom of a buttered baking-dish with crumbs, cover with one-half the eggs, the eggs with sauce, and the sauce with meat; repeat. Cover with the remaining crumbs. Place in the oven and bake until the crumbs are brown. The meat may be omitted.

BACON DRESSING.

While bacon salad dressing will probably not be relished so frequently as the more standard Fench, mayonnaise, and cream dressings, it furnishes a pleasing variety in the menu.

Cut the bacon in small bits, place it in a frying pan, fry out the fat and brown the bacon. To every fourth cup of drippings add two tablespoons vinegar, one teaspoon salt, two teaspoons sugar, and one-fourth teaspoon pepper. If the vinegar is very strong dilute it with water. The amount of seasoning used will depend largely upon the ingredients in the salad. The dressing is used while hot and will wilt the dandelions, lettuce and water cress, and other greens over which it is poured. A potato salad mixer with this dressing is delicious.

Stuffed Eggs—Boil six eggs for twenty minutes, remove the shells, cut the eggs in two crosswise, and slice off a piece from the round end of each half so it will stand firmly; remove the yolks, mix with them a little chopped ham, and fill the cavities in the whites with this mixture, heaping it in cone fashion. Arrange the little filled cups on a flat dish and pour about them a dressing made by the following recipe, which will be sufficient for eight eggs: Two yolks, one-half teaspoonful of mustard, one-half teaspoonful of salt, two tablespoonfuls of vinegar, and twelve tablespoonfuls of olive oil. Beat the yolks quite light and stir into them the salt and mustard; then add the salad oil very slowly, stirring, and as the mixture thickens, thin it with the vinegar.

PASS THE APPLES

H. Van Antwerp, Kentucky.

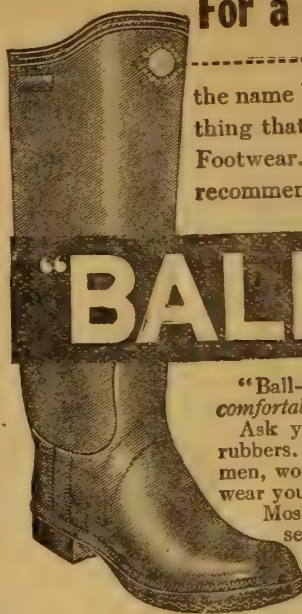
When every pool in Eden was a mirror,
That unto Eve her dainty charms proclaimed,
She went undraped, nor thought it was an error,
Because she had not learned to be ashamed.

'Twas only when she'd eaten of the apple
That she became inclined to be a prude.

And found that evermore she'd have to grapple
With the much-debated problem of the nude.

For a Quarter of a Century

the name "Ball-Band" has stood for everything that is good, strong and serviceable in Footwear. Today, 55,000 dealers sell and recommend it and nine million people wear it.



BALL (Red) BAND

"Ball-Band" Boots have wear built into them. They are comfortable, and always feel good on your feet.

Ask your dealer for a pair of "Ball-Band" light weight rubbers. They are of the highest quality and come in sizes for men, women and children. Whatever style of Rubber Footwear you want, look for the Red Ball and get "Ball-Band."

Most dealers sell it. If yours does not, write us and we'll see that you get the genuine.

Our free booklet, "More Days Wear," illustrates the right kind of footwear for different kinds of outdoor work.
Mishawaka Woolen Mfg. Co., 370 Water St., Mishawaka, Ind.
"The House That Pays Millions for Quality"

This house for \$931.00

This house for \$880.65

DO YOU WANT TO SAVE MONEY ON YOUR HOUSE?

OUR PLAN BOOK illustrates many attractive homes and we will send it to you free of charge upon request.

Should you want a house that is different, send us the rough plans and we will complete them for you and give you an exact estimate of the cost of all material delivered at your station, READY TO ERECT.

Every piece is cut to fit and carefully numbered, no waste, no mistakes. When you receive the material all you need is COMMON SENSE AND A HAMMER.

These houses are not only saving our customers \$100 to \$300 on material but the labor saving in building often amounts to twice that much.

Write us today for Our Plan Book

READY BUILT HOUSE CO.

312 Ship Street

Portland, Oregon

Thereafter she devoted her attention, Her time and all her money to her clothes.

And that was the beginning of convention,
And Modesty as well, so should suppose.

But now reaction's come in fashions recent,
And clothes conceal but little from the men,

It does seem in the name of all that's decent

The apples should be passed around again.

INSTEAD OF VINEGAR

In making all kinds of salad dressings, lemon juice is far superior to vinegar, and its acid contains none of the irritating elements which upset delicate stomachs. As a garnish the lemon is fine served with meats, game and fish. Not only does the juice improve the flavor but it aids digestion in helping to break up the fats. Serv-

NOW IS THE TIME To Kill Wolves, Coyotes, Etc.

Furs are prime, and we will pay you the most money for the skins. Send your order today for.

SURE DEATH CAPSULES for Wolf, Fox, Lynx, Wild Cats, Etc. Price, per doz., 25c; per hundred, \$1. These Capsules are put up in hard gelatin containers and are safe and convenient to carry.

Indorsed and recommended by the U. S. Government as being the best poison made for killing Wolves, Lynx, Wild Cats, etc., and is used by the U. S. Forest Rangers. Letters and recommendations and methods of using, from the Forest Service, U. S. Dept. of Agriculture, furnished free upon request, also catalog and fur price list.

Poisons can not be sent by mail. Please prepaid on \$1.00 worth or more (Canada for \$1.25 or more). Each Capsule will kill if directions are followed.
Northwestern Hld and Fur Co.
Minneapolis, Minn. Established 1902

ed with oysters, either raw or cooked, it adds an appetizing zest. It should always be baked with salmon, lemon, and salmon is delicious served

"Let's Build Up the West"

That's the spirit behind the Beneficial Life Insurance Company.

The money you pay us for life insurance protects you just as surely and just as safely as any company can protect you and the money kept in reserve is working all the time to build up the west.

We commend this thought to loyal westerners who are considering life insurance.

Beneficial Life INSURANCE CO.

"The Big Home Company."

Joseph F. Smith, President.
Lorenzo N. Stohl, Gen. Mgr.

Home Office, Vermont Bldg.,
Salt Lake.

with sauce piquante. Economical cuts of meats may be made tender by the addition of a tablespoon of lemon juice in cooking. A tough steak may be made tender and delicious by rubbing it with olive oil and lemon juice before frying.

NUT SQUARES

White of 1 egg, 1 Tablespoonful Cold Water, Vanilla Flavoring, $\frac{3}{4}$ Cupful Chopped Nut-meats, and Pulverized Sugar.

Beat the white of the egg with the water until quite stiff, then stir in enough pulverized sugar to make a stiff paste—the exact quantity can not be given, as it depends on the size of the egg. Flavor with the vanilla, beat into the mixture the chopped nut-meats, spread the mixture thinly on waxed paper and set aside to harden. Cut into squares before the candy quite sets.

THREE ESSENTIALS OF

A FARM HOME

Three things are essential to the country home. It must be a shelter, it must have a good woman for the wife and mother and it must have a fireside. The farm home is the little republic where the child learns its first world lessons. The home must have plenty of room, easy of use, bath, sunlight, open fires and ventilation.

Too often in the farm home the woman is the wife, mother, cook, maid and laundress. The conservation of the woman in the farm home is one of the big things we must keep ever in mind. The place isn't home without the pure, good woman in it. It is pretty hard to call a flat a home even if she is there. The home must be a place where you can plant things can have children and watch them grow. The country home must have children.

Remember that the child has rights in the home. First of these is the right to be well born. I married my wife because I loved her and also because I knew I would be proud of her children. Then the child has a right to sleep in the open air, to clean wholesome food, to laugh and play, to share the labors of the house and learn early the joy of a task well done and a rest well earned. The little farm home is the only spot on earth where all these things can be assembled.

Don't experiment with sleeping porches. Just move your bed out there and stay there. Have a large screened porch on the side of the house, for there in summer most of the work will be done. Have low ceilings and easy stairs for the sake of the wife and mother.

The fireside is not only the soul of the farm home, but it affords almost perfect ventilation. More than anything else the fireside will hold the boy or girl to the farm. The highest ideals of morality come from the fireside and disgust and loathing of evil develop around the family fireside. A little music supplied by the children, the best books, a few good papers and magazines, not too many, and the child will lose his desire to run off to the city.—Jos. E. Wing.

Leading thinkers, not only in the United States but all over the civilized world, are telling us that there is no better index to the intelligence of any given community than the one to be read in the conditions under which it allows its infant citizens to develop.

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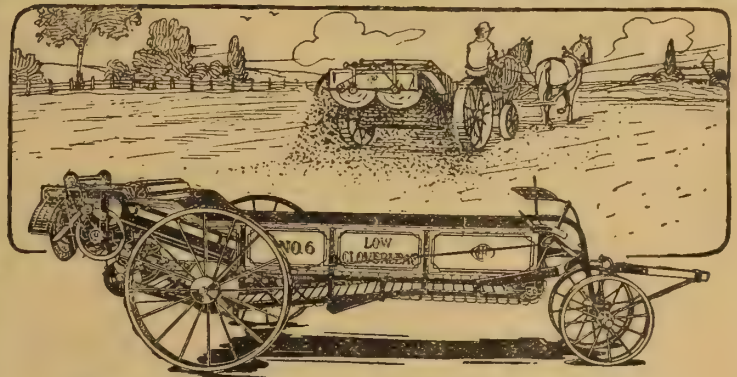


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GALLOWAY BROS. & CO.

Seed Specialists, Waterloo, Iowa.

THE USE OF OUTSIDE ACTIVITIES IN OUR SCHOOLS

(Continued from page 3)

and girl in the state is entitled to Government bulletins on such subjects that interest them most. These bulletins deal with such subjects as bread-making, canning of fruits, meats, and vegetables, flower and vegetable gardening, corn raising, hogs, poultry, etc. These activities are carried on at home and not only give the boy and the girl rich experiences in the real activities of life, but add greatly to the lightening of home burdens of both father and mother.

This organization is what is known as Boys' and Girls' Club Work. Their motto is: "To Make The Best Better!" With this aim in view, some of the children of this state have accomplished wonderful results in intensive culture, others in canning food products, some in various other lines of activity in which the children engage.

Boys' and Girls' Club Work is not new in Utah. Here are some of the things that they have accomplished: The average yield of potatoes grown per acre by the farmers of the state for a period of ten years was 140 bushels. The boys in club work with their motto before them: "To Make The Best Better" to do a job better than it has been done before—increased the yield per acre to an average of 585 bushels. Had the number of boys in the potato club equaled the number of boys in the potato club equalled toes no doubt their averages would have been considerably less. As it is they raised $5\frac{1}{4}$ times as many potatoes as their fathers. The corn club boys doubled the yield of corn—32 vs. 64 bushels. The average tonnage of sugar beets per acre is 13.6; the school boys in club work have raised an average of 23.2 tons per acre. The average number of tons of tomatoes raised per acre in the state is 8; the boys in club work have increased that yield by 100 per cent. In other words, the boys in club work are making 2.57 blades of grass grow where their fathers are making but one.

(To be continued)

IRRIGATORS' QUERIES ANSWERED O. W. Israelsen, Utah Agricultural College.

In last week's issue of the Farmer, you pointed out the necessity of distributing water uniformly, but how can irrigators be certain that they will get uniform distribution?

The problem of getting uniformity in distribution of irrigation water is indeed a great one. The factors which control this uniformity may be briefly summarized as follows: (1) The preparation of the land for irrigation; (2) the topography or condition of the surface, whether the slope be great or small; and (3) the rate at which water is applied; that is, the size of stream used when a given size of land is irrigated. Upon this point very little experimental evidence has been accumulated. However, enough work has been done to enable us to reach two general conclusions. For example, certain experiments in California indicated that

when a stream of one cubic foot per second was applied to one acre of loam soil, the entire quantity of water was absorbed by the soil before the land was covered. When a stream of seven cubic feet per second was applied to the same area, a total average depth of nearly four feet of water was required before the entire land was covered. However, when the rate of application was increased nearly four times; that is, when twenty-five cubic feet per second were applied to the one acre plot, the entire surface was covered by using only an average depth of one-half foot; a very conservative quantity.

The one thing which should be emphasized in Utah, is more careful preparation of land, with a view of getting uniform distribution of the water which is applied. This also will make it possible to cover a given area by using very much less water than what is used at the present time.

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Plant more evergreens about the home. There is nothing much prettier than a well grown spruce, the branches of which are partly covered with snow, after a light snowfall in early December. Have you ever noticed the effect of snow on the branches of spruce on a clear moonlight night in winter?

"Civilization begins and ends with the plow."

—Roberts.

The Utah Agricultural College

EXTENSION DIVISION

Announces Farmers' Round-ups and Housekeepers' Conferences as follows:

JANUARY 22 to 27.....OGDEN

JANUARY 29 TO FEBRUARY 3.....LOGAN

FEBRUARY 7 TO 15.....CEDAR CITY

Special emphasis at these Conventions will be placed upon such subjects as, The Business Side of Farming, Marketing of Farm Products, Veterinary Practice, Nutrition of Children, Relation between Food and Health, Electricity in the Home, Mothercraft.

For complete information address: The Director,
Extension Division, Logan, Utah

Second Semester at the College Commences January 30, 1917

Address inquiries to the President, Utah Agricultural College, Logan, Utah.



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This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

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This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions of the World's Fair held at Frisco this last year. Both Sire and Dam, is still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale at all times.

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with quality.

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It commences to ripen its enormous crop
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far ahead of the old common sorts as
the self binder is a head of the old reap-
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thirty acres in corn plants. Sold with a
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"There seems," a northerner once
observed to Senator Morris Shep-
pard, of Texas, "there seems to be a
strange affinity between a colored
man and a chicken."

"There's nothing strange about it,"
smiled Sheppard. "One is descended
from Ham and the other from eggs."

OPENED JAN. 1ST, 1913

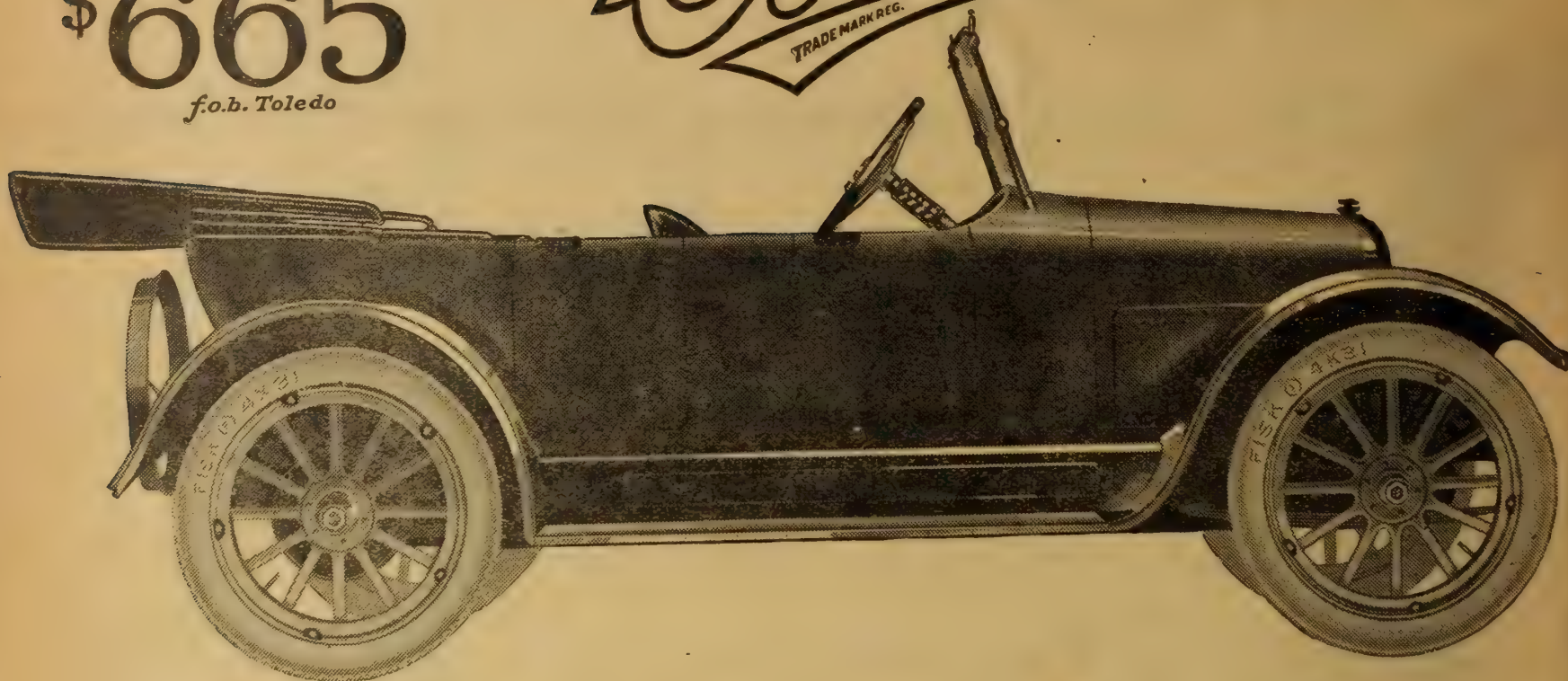


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\$665
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A Complete Line of Automobiles All New Values

From your point of view this announcement is most important.

For herein we set forth the achievement toward which this company has aimed for the last eight years.

This achievement in a word is the completion of our gigantic organization to a point where we could make and market a complete line of automobiles under one head.

One executive organization,
—one factory management,
—one purchasing unit,
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Buying power is concentrated. Costs are distributed over all these cars. The savings are tremendous.

As a result we are producing cars of exceptional quality—and marketing them at unusually low prices.

Every car is built to a rigid standard of performance, comfort and appearance.

The new Light Four at \$665 is a striking example.

It has good style—built low with harmonious and full sweeping body lines. It is a beautiful car in every sense of the word.

The motor is powerful, quiet and of sturdy construction. The turning radius is short. The car has a quick acceleration and is built to tour safely and comfortably from the Atlantic to the Pacific.

And with all these good qualities *it rides beautifully*. The soft cushions, the long resilient cantilever rear springs, the large tires (31x4) and the proper balance in construction absorb all types of jolts—the choppy cobblestone, the cuppy macadam and the heavy ruts and thank-you-ma'ams of American highways.

Yet this is but one of the new Willys-Overland values.

Never before have the economies of vast production been available for buyers of every class of car.

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Two Passenger Roadster
Light Four, 104 in. wheelbase, \$650



Four Seater Sport Model
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Light Six Roadster, 116 in. wheelbase, \$970



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UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 27

LEHI AND SALT LAKE CITY, UTAH

FEBRUARY 3, 1917

Keeping a Record of the Farm Business

M. H. Greene, Farm Management Demonstrator, U. A. C.

The time has come when the farmer must look at his business in the same way that the merchant, the banker, the doctor, or the lawyer views their respective vocations, i. e. from the profit or money return point of view. The frontier type of farming is recorded as an incident of the past, when crops were grown with the object of merely supplying the family with a living, while the self-sufficing farmer was reaping the harvest of increased land values.

Our opportunities of possessing fortunes due to the increased value of our farm property is reduced to minimum, as compared with a century ago, or even with the past decade. The rights vested in us today, entitling us to a tract of 160 or 320 acres of public land under the Homestead Act of 1862, the Timber Culture Act of 1873, the Desert Land Law of 1877 and 1891, the Timber and Stone Act of 1878, or the enlarged Homestead Act of 1909, cannot be compared with the right conferred on citizens of the past 50 years. With the choicest of the government lands now occupied and the value of our property becoming fixed, the agriculture of today finds itself an economic study of making the farm products pay for the operation of the farm. How will the farmer show his operating costs and the farm returns? How will he know what drop pays best? How will he know that he is really succeeding in the farming business, after allowing himself a fair wage and deducting an interest charge on the capital he has

invested, if he does not keep a record of his business.

It is extremely important that the farmer knows with some degree of accuracy what lines of production are yielding the best returns, so as to emphasize that phase of work. Or, if a line of work is found unprofitable, his methods of production should be changed and if the enterprise cannot be made profitable by him, it should

their sons some special inducement to have them keep the farm record. This not only would give them an insight into the farm business but would enable them to make a choice of their life's work on the farm.

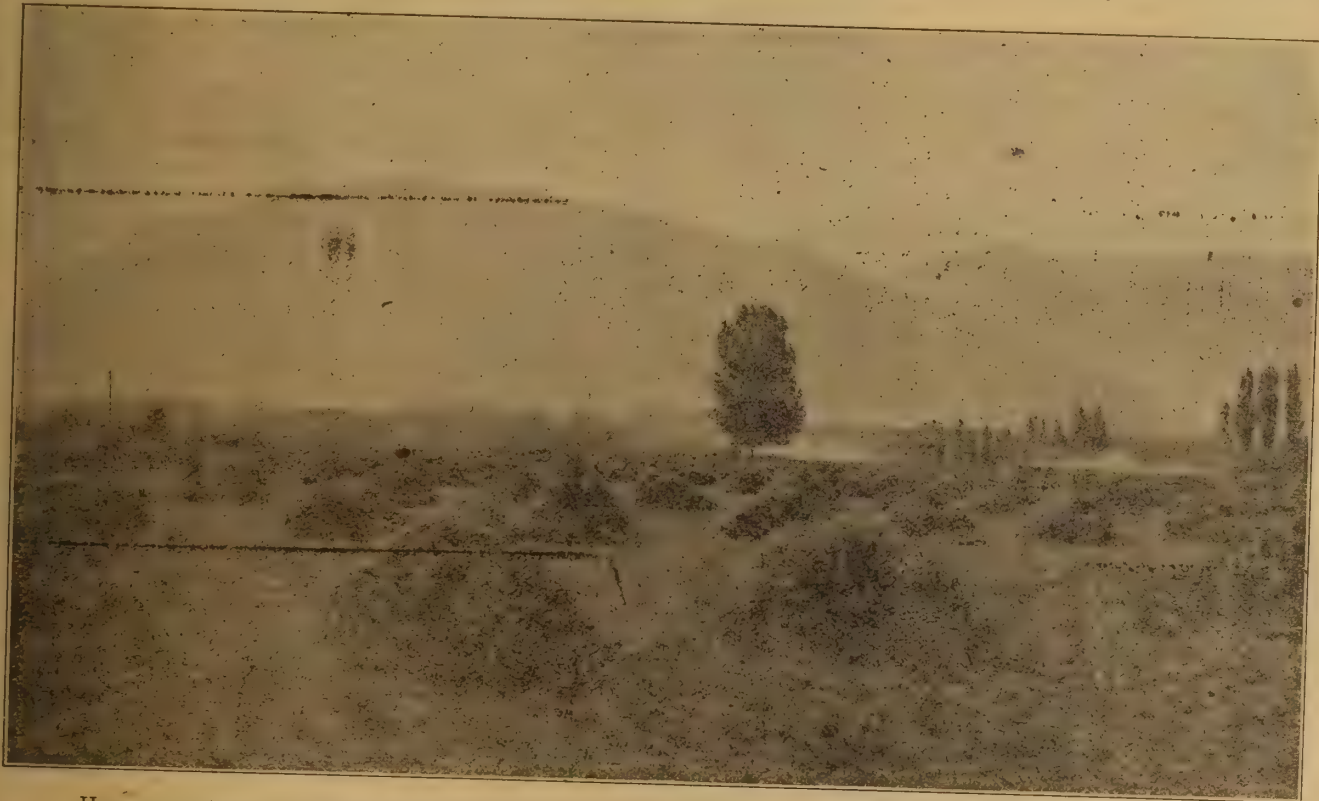
A Simple Record Book Devised.

The Utah Bankers Association has recently issued a farmers' account book which has been specially prepared for our Utah farmers. The book

- (a) The Years Business.
- (b) Value of Feed Fed.

The important feature of the book is the cash account, which is to represent the year's business, as the inventories are taken at the beginning and end of the year and the summaries made at the close of the year. The pages representing receipts are divided into columns with the following headings:—crops sales; live-stock

sales, milk, butter and cream sales; poultry and egg sales; and miscellaneous sales. One column is left blank for the farmer to insert a heading for the particular farm enterprise which is most important. Ample space is provided for the date and description of each transaction. Example. On Jan. 8, farmer Jones receives \$18 for the sale of a ton of alfalfa. Jan. 29, \$15 for a veal, the dates are recorded in the date column with proper description in the space following. \$18 is recorded in the



How many tons of alfalfa are there in this field? Do you know the yield of your alfalfa per acre?

be left out of his operations. To determine which part of the farm business pays best, the farmer must know how to estimate costs and keep proper records.

Farm Records Must Be Simple.

The farmer's work naturally prevents him from keeping successfully a complicated set of accounts. His time during the day is occupied by farm labors and at night he is usually too tired to devote much time to any system of accounts. The method used should therefore be so that the farmer or some member of the family can easily make a record of the business. It is suggested that our farmers give

was prepared by the State Farm Management Demonstrator with the object in view of making it so simple that it could be easily kept, and at the same time bring out the strong and weak points of the farm business.

The book is divided into three divisions:

1. CASH.
 - (a) Receipts.
 - (b) Expenses.
2. INVENTORIES.
 - (a) Land and Buildings.
 - (b) Live-stock.
 - (c) Machinery.
 - (d) Feed and Supplies.
3. SUMMARIES.

column headed crop sales and \$15 in the column headed live-stock sales.

On the opposite side from the receipt page is the Farm Expense page, divided into columns with space for date and description of money spent for blacksmith and machine work; labor; machinery, building and fence material; live-stock purchased; fees, rents and taxes; feeds and seeds; and miscellaneous expenses. Example, \$5 spent for labor would be inserted in the labor column, \$10 spent for a cultivator in the machinery column, \$25 for hay in the feed and seed

(Continued on page 5)

THE NEW DE LAVAL

A Bigger and Better Cream Separator for the Same Money



THE FARMER who buys a De Laval this year will get bigger and better value for his money than ever before.

Not only will he get a better machine, a simpler machine, a machine that will skim even closer than any previous De Laval, but he will get a machine of larger capacity.

And the price has not been increased one cent.

Just think what that means to cow owners in the face of rising prices on almost everything else the farmer has to buy, including other cream separators.

Only the tremendous volume of De Laval sales makes it possible to give the farmer more for his money when others are giving less.

The NEW De Laval is the culmination of nearly forty years of experience and development by the largest and oldest cream separator concern in the world. It represents

The greatest improvement in separator construction in the last thirty years

If you are trying to get along without a cream separator, or with a half-worn-out or unreliable machine, why not get a NEW De Laval NOW and stop your cream waste? You don't need to count the cost, because the De Laval will soon pay for itself.

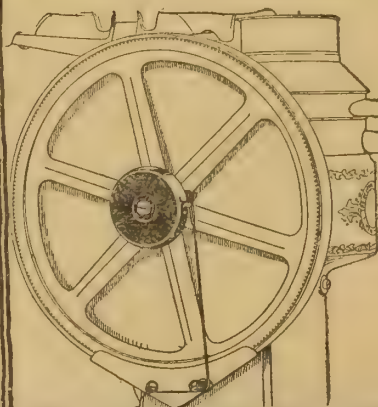
There is a De Laval agent near you who will be glad to explain all the improvements and advantages of the NEW De Laval, and who will set and start a machine for you on your farm and let you try it for yourself.

If you haven't the spare cash right now, that need not stand in the way of your having the use of a NEW De Laval the rest of the winter.

We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and the balance in several installments—so that your De Laval will actually pay for itself while you are using it and getting the benefit from it.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for any desired information.

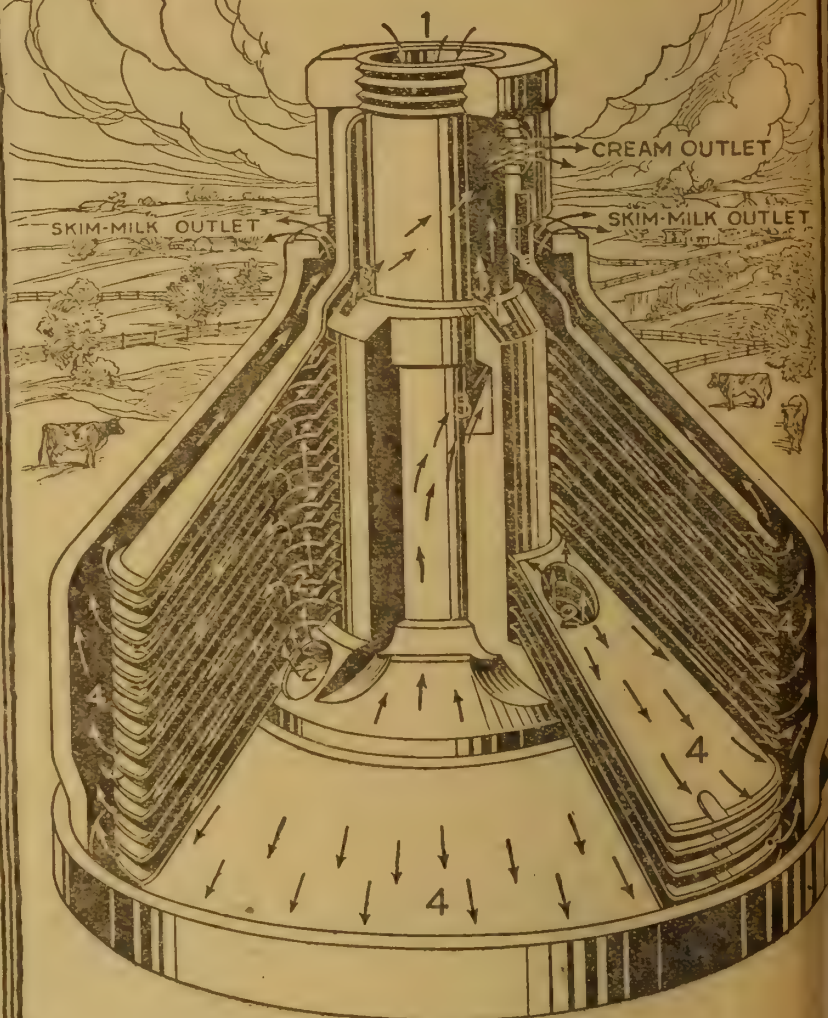
Every NEW DE LAVAL is now equipped with a Bell Speed-Indicator



The "Warning Signal" which insures proper speed and uniform cream

Because nine people out of ten turn the separator handle too slowly and because this always means loss of cream and cream of uneven thickness, every cream separator should be equipped with a reliable speed indicator.

Every NEW De Laval is now so equipped. The De Laval Bell Speed-Indicator is simple. It is accurate. It is reliable. There is nothing to wear out or get out of order. No matter who runs your De Laval, the "warning signal" will tell you when the speed is not right. You hear it and do not need to see it.



THE NEW SELF-CENTERING DE LAVAL BOWL Some of the points of superiority of the NEW DE LAVAL

The New De Laval bowl design and the new method of delivering the milk into the discs give increased capacity without increasing the weight or size of the bowl or increasing its speed. The incoming whole milk is delivered beyond the cream wall, and this, in conjunction with the improved design of the bowl, makes possible closer skimming than ever before, especially under the more difficult conditions of separation, such as skimming a very heavy cream or separating milk below usual temperature.

The much lower speed of the De Laval than other cream separators (in most cases from one-half to one-third less) insures minimum wear of gears and much longer life of the machine.

The New De Laval concave-bottom, self-centering bowl is so designed and so supported by the detached spindle that it will run true and do perfect work even after long wear, the great importance of which every separator user will appreciate.

There are fewer discs in the New De Laval bowl, and all discs are unnumbered and are interchangeable.

By reason of its simpler construction and the fewer number of discs, the New De Laval bowl is more easily washed and cleansed.

All New De Laval bowls are automatically oiled, every moving part of the machine being bathed in a constant film of oil. There are no oil holes anywhere on the machine, and the sight feed oil cup on the top of the frame provides for a constant supply of fresh oil.

The gears, pinions and other moving parts of the De Laval are exceedingly simple in arrangement, substantial in dimensions and always interchangeable.

The De Laval tinware is sturdy and heavily tinned, well suited for long and hard wear, and easy to clean.

The low speed of the De Laval bowl, its combination with greater capacity for a given size and weight of bowl than is found in other separators and the automatic De Laval oiling system, make the De Laval the easiest cream separator to turn.

New Catalog will be mailed upon request

THE DE LAVAL SEPARATOR CO.

165 Broadway, New York 29 E. Madison St., Chicago
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A YEAR.

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VOLUME XIII.

LEHI, UTAH, SATURDAY, FEBRUARY 3, 1917

No. 27

Agricultural Conditions In the State of Utah

Dr. E. G. Peterson, President of the U. A. C.

"The present year, 1916-17, witnesses a substantial increase in College enrollment as recorded in the report of the Registrar. This increase is especially encouraging in view of the fact that several Junior Colleges began their work last September. Such increase speaks well for the general condition of prosperity of the farmers of the state and the continued interest of the state in higher education. The Utah Agricultural College has more students now registered in agriculture and related branches of study, in proportion to population, than any other Agricultural College in America.

Our opportunity is clearly and well defined; to build in this state a rural civilization which shall be the model for all the world. Such is not an idle dream. Such an ideal is within our reach. Our agriculture is demonstrated to be sound economically inasmuch as our best farmers are earning as much as the best farmers in any other section of the country, excluding only a few specially favored acres near to large markets. We have people already trained in the spirit of co-operation for lack of which agriculture in America now pauses in its onward march. Utah is the birthplace of rural co-operation on this continent. We have a people with the highest educational ideals, a people devoted to education in a way unsurpassed. Upon these factors we can build a civilization which may surpass anything the world has yet known.

Our Diversified Agriculture

Furthermore, our agriculture, because of distance from markets, intimate, cultivated forage and feed opportunities and range, must be centered around the live-stock and dairy industries. This insures a higher type of agriculture than is possible under different agricultural conditions. The most encouraging agricultural development of the past year is the enlargement of our facilities within the state for the handling of live-stock through the excellent yards and packing plant at Ogden and the Cudahy plant and Union Yards at St. Lake City.

Our farming is diversified which is the most stable and prosperous type of farming because of the demands which it makes upon the intelligence and ability of the operator, the restoration which it makes possible of fertility to the land—thus avoiding that soil impoverishment which is the most serious problem of all exclusively cropped acres of the world. Diversified farming which includes live-stock farming, is the most sound, economic type of agriculture on a pure business basis.

Sugar Beets and Live-stock

"Besides being adapted to the raising of cereals, garden crops and fruits, the state is unusually blessed because of its natural adaptability to the raising of sugar beets. This crop, which grows so readily in our soils, provides a most excellent money crop and fits well into our general scheme of farming. It forms a most desirable economic unit on our live-stock farms, insuring adequate utili-

The man that undertakes agriculture as a pursuit brings himself at once into contact with some of the most vital forces of nature and if he shall succeed he must form a most wholesome and genuine partnership with her, which must be regarded with unwavering fidelity so long as he chooses to follow his high calling.

He will discover that the one outstanding feature, above all others is that agriculture is based upon true science and that the laws of nature

rightful anticipation of the harvests to be gathered in the seasons thereof.

There is no occupation under the sun that affords such valuable lessons as that of a wise and intelligent tilling of the soil. Among the most prominent of all the valuable lessons is that of obedience—"obedience to the powers that be"—for man learns to serve, to work with patience and hope, and to wait nature's time for the reward. This results in stability and purity of character, which in turn makes for the highest quality of citizenship. Non enlargement of a man's highest and most useful powers can be more wholesome than those developed by contact with nature as found in the soil and the elements that conspire to produce the fruits of the earth and provide for the necessities of mankind.

Nature then is the best kind of a partner because she is always true, and the real honest, sympathetic, wholehearted, open-minded man who chooses agriculture for his occupation and joins hands devotedly with nature as found in the soil to work out his destiny, is on the royal road to possess the greatest gifts ever secured by mortal man—the endowment of the knowledge and power to subdue the earth and to control the forces of nature in administering to his own needs and contributing to the happiness of his fellow men—obtaining for himself, if he will, some of the sweetest joys of life that can come only from a personal and intelligent contact with the infinite laws that lie at the base of all truly genuine prosperity. He is thereby possessed with the highest impulses which quicken the appreciation for the good and the beautiful among all of God's creations. He is awakened to his relationship as to the earth and begins to realize that the Infinite gave him a grave responsibility when He said man should "have dominion over the earth."

No other occupation is so congenial to those who love it as the cultivation of the farm and the orchard. If we believe the sacred record (and I hope we do) the tilling of the soil was the pursuit the infinite selected for the first man.

The edict that man should earn his bread by the sweat of his brow has not been abrogated, but has continued through each succeeding generation, and the man who works upon the farm, now as heretofore, has the double joy of both earning and producing his daily bread and of adding wealth to the world. When we look upon the trees with their luscious fruits, and the flowers in all their

(Continued on page 11)



J. W. Paxman.

Specialist in Dry-Farming for the Utah Agricultural College. He will write a series of articles on Dry-Farming for the Utah Farmer.

zation of labor, machinery and other equipment, besides its emphasizing of the most advanced practices in soil culture, which practices naturally have an effect upon all the procedure on the farm.

The Sheep and Range Industry

"We must do more for the range manager. Utah is most magnificently adapted to sheep and wool growing. We urgently need however, more scientific management of the range, better management of the flocks as regards breeding, feeding and lambing, and better sorting and grading of the wool. Even seemingly very trivial reforms in these practices will result in surprisingly larger returns to the wool growers.

The Range Under Fence

"We have reached the state in the development of our sheep and cattle industry and in the development of our range when we must do our grazing in a measure under fence. De-

velopement of dry-farming, the national

limitations necessarily imposed on our stock growers, and the present prices for meat and wool make fencing of our natural forage lands a thing of the very near future. We need therefore a scientific determination of all the facts regarding the range in order that the small as well as the large holder may reap the largest possible reward from his industry."

govern supremely in every particular. As the farmer becomes familiar with his occupation he learns to respect nature and to conform to her demands, knowing full well that he cannot disregard her demands with impunity nor violate her laws without reaping the penalty. We find that nature is well fixed in her laws, is inexorable in her demands, immutable and undeviating in her ways and furnishes a fixed and perfectly safe basis for every legitimate hope and

Dairying

THE COW AT CALVING TIME

There is no time in the whole milking period that has such an important bearing on the establishment of a standard for production for the year as the period previous to and following calving time. It is understood by many, but not by all, that if a cow is allowed from six weeks to two months in which to rest from one lactation period to the next, she will yield more than when milked continuously up to the time of parturition. We knew the effect upon ourselves; when our faculties are continuously at work, especially when the nerves are brought into play. And it is a fact that parturition vitally disturbs the nervous and physical activities especially the forces of digestion. The act of calving brings stimulation to the milk producing organs, which is the only natural and effective means of stimulating milk secretion, and it is a serious mistake not to make the most of it. It is necessary to handle the cow in such a manner as to derive full benefit from the stimulation while it is yet present, since with most cows it rapidly wears off if not utilized.

Rather liberal feeding which actually builds mild nutrients on the body,

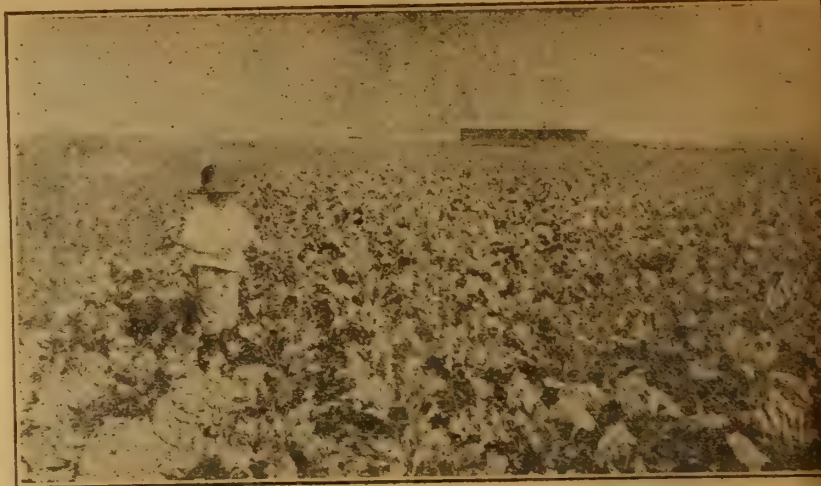
during the last few weeks of the lactation period, and while the cow is dry, is the secret of preparing the cow for the succeeding lactation period. This may appear to be wasting feed, but this is the important period when it is most valuable. During the last few weeks of the milking period grain may be fed at the rate of one pound to each two pounds of milk produced, reducing at the period when the cow is to be dried. A good many have trouble in drying off persistent milkers by the plan of skipping milkings, but when less than 14 pounds of milk is yielded, daily milking can be discontinued at any time without serious difficulty, if accompanied by a reduction in the feed. The udder will become filled, but the fluid contents will soon be absorbed. When dry, about eight pounds of grain should be fed daily, more if the cow is in poor condition. It would not be profitable to feed inferior cows this way. These, however, cannot always be detected from the others unless all have an equal chance, and weeding is practiced, based upon the record of production. The grain ration should be bulky, laxative and nutritious, having slightly more carbohydrates than a milk ration, with a nutritive ratio of about one of protein to seven of carbohydrate and fat equivalent. If a high percentage of fat is sought even more liberal feeding of grain will be useful.

During this period protein and fatty tissues are actually being stored upon the body to be used in the production of milk before the cow is in shape to digest and assimilate a full ration. A cow is like a toboggan in that the higher she starts at the beginning of her slide, the faster and longer will she keep running. It is just as serious to crowd the appetite during the first month after calving as to neglect to lay on this supply of nutrients. The cow should be kept hungry. If fed all she would eat harm will be done, and a check to her flow is the natural result of going "off feed," as most cows reach their limit early by this sort of handling.

A week before calving reduce the grain to four or five pounds, feeding mostly bran and oats. On the day of calving a pound and a half of epsom salts, luke warm water, and good hay are enough for a well conditioned cow, although two quarts of bran mash may be useful. Begin the next day feeding lightly and after four or five days introduce a grain mixture gradually. Increase this gradually about one-fourth pound per day. DO NOT EXPECT A COW TO HANDLE ALL THE FEED CALLED FOR BY HER YIELD OF MILK. If she has been properly conditioned and is coming to a good flow from one month to six weeks is early enough to get her on full feed. For from three to six months she should gradually lose the flesh stored up.

WATER FOR COWS

All animals require plenty of good, pure water. This is especially true of the milking cow, as water constitutes more than three-fourth of the volume of milk. The water supply, therefore, demands the dairyman's most careful attention. Stale or impure water is distasteful to the cow and she will not drink enough for maximum milk production. Such water may also carry disease germs which might make the milk unsafe for human consumption or be dangerous to the cow herself. During the winter, when cows are stabled the greater part of the time, and unless arrangements have been made to



Buy Beet Land in Cache Valley

RICHLAND ACRES has 2800 acres of beet and dairy land that is tile drained and irrigated, all within three to five miles of Logan, Utah.

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The Giant Of The Dairy

Grade up with a Jersey Bull! He is half the herd, and the breed determines half the profits. Breed him to your grade cows and bring the herd average near the Jersey average—489 pounds of butter fat per year. Your calves will be beauties. They'll mature quickly into gentle, hardy, vigorous and persistent milkers, long-lived and adapted to any climate. Let us tell you more about them. Send for our book, "The Story of The Jersey." It's free and it's a dandy.

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The American Jersey Cattle Club
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58 years

of service to this
community.

May we serve you?

Walker Brothers Bankers

Founded 1859.

Oldest Intermountain Bank.

SALT LAKE CITY.



keep water before them all the time, they should be watered two or three times a day. If possible, the water should be 15 or 20 degrees above the freezing point, and should be supplied at practically the same temperature every day. When water well above freezing temperature is stored in tanks and piped direct to the cow, there is probably little occasion for facilities to warm it but when it stands in a tank on which ice often forms, it usually pays well to warm it slightly. This can be done by a tank heater, by live steam, or by hot water from a boiler. If a boiler is used for running a separator or for heating water to wash and sterilize utensils, steam from it can readily and cheaply be used to warm the water.—Farmers Bulletin 743.

DO YOU KNOW THAT

Exercise in the garden is better than exercise in the gymnasium?

Clean water, clean food, clean houses make clean, healthy American citizens?

It is estimated that the average manure pile will breed 900,000 flies per ton?

A high-bred dog has a right to have his birth registered—so has a baby? Health is a credit with the bank of nature?

Today is always the best day to clean up?

An efficient health officer is a good community investment?

In the lexicon of health there is no such word as "neutrality" against disease?



HOLSTEIN CATTLE
Purebred Registered
Send for Free Illustrated Booklets. The Holstein Friesian Association America, Box 279, Brattleboro, Vt.

If you want money, drop us a line.

We loan on first mortgage on Utah farms or Salt Lake City real estate at reasonable rates.

Prompt action and fair treatment if you do business with us

Palmer Bond & Mortgage Co.

WALKER BANK BUILDING
SALT LAKE CITY

It's the baby that lives that counts—U. S. Public Health Service

Dock Hocks, our blacksmith, out to the post office the other day out washing his hands, and accidentally canceled several stamps the master had on sale.—Hogwallon tuckian.

KEEPING A RECORD OF THE FARM BUSINESS (Continued from page 1)

column, etc. It is essential that the farmer takes an inventory of his business at the beginning and end of the year, placing fair values on his property. This is done in order to compare the value of the property January 1, 1917 with that possessed January 1, 1918. Also to find out how much money is invested in the farm business. By following this method a summary can easily be made of the various accounts.

Free Farm Account Books. The Bankers Association is co-operating with the Agricultural College in a campaign, favoring the keeping of farm records. The Bankers have furnished the College, Farm Account books, and the College, through its Farm Management representative is furnishing Utah farmers the account books free, if they will return to the Farm Management Demonstrator their farm record at the end of the year, so that he may aid them in summarizing and analyzing their accounts. After which the books are to be returned to the farmers with recommendations and suggestions regarding the farm business. In case any of the farmers desire help in keeping their records at any time the Farm Management Demonstrator or the County Agricultural Agents, in their respective counties, will be glad to render any help they can in this important work. Every farmer in the state should express his willingness to co-operate with the Agricultural College in having a scientific study made of his farm business. No information in any record is to be imparted to any one and any good can result from the work. Ready scores of farmers in different parts of the state have expressed their willingness to co-operate with the College in the matter of keeping farm accounts. Undoubtedly this is one of the most important developments in the study of agricultural problems. To know how to produce is one thing, and what to produce quite another. The farmer should be looked upon from the standpoint of the net returns it produces for the operator for his labor and managerial ability. To measure success by net returns, means the keeping of a record of the farm operations, so that the unprofitable pursuits may be avoided and the profitable enterprises emphasized.

YOU TELL
IRON FROM STEEL?
In many instances a farmer is at a loss to know whether a piece of metal is iron or steel, be it in a machine or a bar form. There are numerous methods used to distinguish between these, of which the following are the four most common:
First: The method most commonly used is to tap the metal with an anvil or piece of metal or to drop it on a hard surface, a concrete floor will do, and not the sound made. If the metal has a clear ring it is steel, a very dull or dead sound it is iron.
Second: Examine the surface and corners of the piece in question. If the surface has a glass smoothness the corners are sharp it is steel. If the surface be rough and the corners somewhat rounded, it is iron.
Third: Touch the metal to an emery wheel and observe very closely the sparks given off. If all the sparks are after leaving the wheel it is

JOHN DEERE IMPLEMENTS


BETTER FARM IMPLEMENTS AND HOW TO USE THEM

BOOK FREE 156 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars.

Describes and illustrates Plows for Tractors; Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain Wagons; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders; Stackers; Rakes; Mowers and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills; Seeders; Grain and Corn Binders.

This book will be sent free to everyone stating what implements he is interested in and asking for Package No. X-160.

JOHN DEERE, MOLINE, ILL.



John Deere Plows

For seventy-nine years the John Deere organization has specialized in making high-grade plows. John Deere Plows are noted the world over for their high quality material, workmanship and their ability to do the best kind of work.

The policy of turning out the best has paid the John Deere Company. The John Deere factory makes more steel plows than any other organization in the world.

The name "John Deere" on a plow is an assurance of highest quality material and satisfactory service. It means real plow value.


The John Deere General Purpose Plow is especially adapted for farmers who rotate their crops or practice diversified farming and have tame sod as well as stubble or old ground to plow.

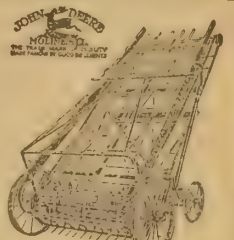
Moldboard has a long, slow turn which pulverizes the soil to best advantage.

In sod, it does not break up the furrow slice but laps the furrow sufficiently to bury green vegetation in loose soil, preventing further growth and hastening decay.

John Deere Plows are made in styles to meet all conditions, no matter what they are.

Look for the name "John Deere" when you buy.





John Deere Hay Loaders

John Deere Hay Loaders are made in the factory where the "Great-Dain" line of hay tools originated.

The three styles of hay loaders made in this factory (the leading loaders on the market today) are:

The New Deere Loader, with the flexible floated gathering cylinder.

John Deere-Dain System Windrow Loader—a single cylinder loader.


John Deere-Dain Loader, the "one man" rake bar loader.


Investigate these loaders.

The John Deere-Dain System Windrow Loader is unusually suitable for hilly countries because of light draft. Only one cylinder. Drum mounted on axle. No gears.

Big capacity and good work—large expansible throat openings and slow speed of raking teeth—no beating, threshing or scraping of hay. Hay is placed in center of wagon.

Handles tender hay gently without loss of leaves.





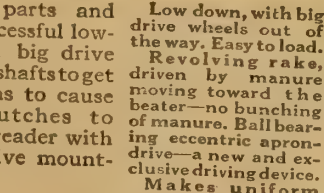
John Deere Spreader

The Spreader with the Beater on the Axle


Mounting the beater on the axle simplified the construction, eliminated troublesome parts and made possible a successful low-down spreader with big drive wheels. There are no shafts to get out of line, no chains to cause trouble, and no clutches to adjust. The only spreader with beater and beater drive mounted on axle.

Low down, with big drive wheels out of the way. Easy to load. Revolving rake, driven by manure moving toward the beater—no bunching of manure. Ball bearing eccentric apron drive—a new and exclusive driving device. Makes uniform spreading certain.

Wide spread attachment for spreading seven feet wide can be furnished for the John Deere Spreader. No chains nor gears. Quickly removed.



THE JOHN DEERE TRADE MARK



To designate and brand their goods, "Deere & Company," use the "leaping deer" trade mark. It is the best known implement trade mark in the world.

The reason that it is so well known is because of the high quality of the implements themselves.

Prestige in farm implements is obtained solely through the superior merits of the goods.

The permanent prestige of John Deere implements has been maintained by the company's strict adherence to principles of manufacture that originally made the goods popular.

The "leaping deer" trade mark is Deere & Company's stamp of approval. It distinguishes John Deere Implements from inferior goods. It means that the implement was made in a John Deere factory, in the John Deere way. It is a guarantee of satisfaction and an insurance policy against disappointment.

Look for the John Deere trade mark when you buy.

JOHN DEERE, MOLINE, ILLINOIS

SCOTCH CAUTION
There had been a special preacher at the village kirk, and he had delivered a powerful sermon on behalf of a charity.

As the congregation dispersed, two old farmers walked off home, side by side.

"Weel, weel," said one slowly, "it was a graun' discorse—a graun' discorse!"

"Aye, was it!" replied the other, sadly. "He's a fine preacher! Mon, he's got a' the silver Ah had in ma pocket! It's terrible expensive tae gang tae hear a preacher liken thon."

"Deed, an' a', it is!" agreed the first old farmer. "Bit Ah've heered him afore. So er e'er I set oot this morn for the kirk, Ah took a' the money oot o' ma Sunday breeks!"—Exchange.

There is no such thing as luck; success comes by hard work.

steel. In steel some of the sparks burst and then the particles burst again. In iron this never happens and but very few of the sparks burst.

Fourth: A final method, if the person is still in doubt, is to break the metal. If the fracture shows up fibrous with a dull appearance, it is iron. If the break is clean and the particles have a luster it is steel.—H. A. Schott, Colorado A. C.



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Change in Address—When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the address cannot be changed. This is a matter of importance to you and to us.

OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers Association.

OUR GUARANTEE

We guarantee every subscriber against loss thru dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent upon application.

FARMERS' ROUND-UPS.

A number of very successful round-ups and conventions have been held during the past few weeks. We have not given any detailed report of them but we do expect to print for our readers in the near future in these columns as many of the talks given at the different places as possible.

Many of our readers have been present at these meetings but will enjoy reading and studying these articles and those who did not go will be able to get some of the good suggestions and ideas given by these speakers at the different places.

FARM LOAN PROMOTERS.

Since the passage of the Federal Farm Loan Law and while the officials are putting it into operation, some promoters and tricksters are making easy money from the farmers. We were told this week of some men who are telling the farmers that the company they represent is agent for the Federal Farm Loan Bureau, offering to make a loan if a small advance of money or note is made.

By way of caution we want to quote from a letter recently sent out by the secretary of the Federal Farm Loan Board:

"Under no consideration should farmers pay out any money or give any notes to agents or strangers purporting to be working in the interest of the new Farm Loan Law."

Another time the same secretary said "That where fees or costs of any kind were collected the board would not consider working with them."

The government is going to deal with the

co-operative organizations of farmers and not with companies where promotion money is used or collected. When in doubt about these things write to the Federal Loan Board at Washington D. C. or to the Agricultural College at Logan. Farmers should get together and organize their own loan associations.

MORE AND BETTER LIVE-STOCK.

Members of the State Farm Bureau, County Agents and others attending the Weber County Round-Up adopted the slogan, "More and Better Live-stock." There are a great many reasons why we should have more and better live-stock on our farms and, few, if any against it.

For a long time the Utah Farmer has been advocating and trying to show our farmers why they should feed their hay and grain to live-stock. This method of selling hay and grain, through live-stock, usually bring the best prices and returns to the soil the fertility it so much needs.

For years we have been sending away our "feeders" to eastern markets. The man who bought them has been making money finishing them for the market. Now if he can make money feeding why can't you? Live-stock conditions in our state are changing, we now have a local market. This should help the man who does not care to feed so he can sell his feeders to local people who are in the feeding business.

Now one of the best ways to have a good local market is to produce good live-stock and see that it is in prime condition when it comes to the market. Don't expect to get high prices for poor hogs, cattle or sheep. Take pride in having it known that when you come to market they will say, "They belong to Mr. So and So and he always has the very best."

We need more live-stock in the state and we should produce only the better kind. It pays in the long run, why not start right.

VALUE OF A CATALOGUE.

This is the age of sincere advertising. Methods and ways have changed since a few years ago.

The manufacturer or jobber of today, who puts out a catalogue, tells the prospective buyer something about his product. He may sell it direct to user, but more often sells through the local dealer. The catalogue will have a picture of the product offered for sale, it will tell something about the work that can be done with the machine or advantages this new invention has over older methods of doing things.

The seedman tells of his work in developing better seeds and what may be expected as a result of using that particular seed.

Many of the catalogues give detailed instruction as to how a machine or implement may be used or how to prepare a seed bed. Experts spend much time in preparing the modern catalogue.

We suggest to our readers that they look over the advertisements in this issue and answer them. We are very careful and allow only reliable firms to use our columns so you are guaranteed a square deal.

Remember this that the modern catalogue is a book of useful information, and every buyer is entitled to have the best, so send to the different companies and after making a careful study you will be able to buy something that will be of better service to you.

Every one who sends out a catalogue stands behind this products. Modern business is being built upon a sincere, honest service between buyer and seller.

A FARMERS RECORD BOOK FOR YOU.

Last week we said something about a record book in which to keep your accounts. We suggest you read the article on the first page and then secure one of these books, take an inventory making a careful record of it, and then keep an account of all you buy and sell during the year.

The day of guessing is past, we must know where we are at in our farming business. Unless you take an inventory and know the investment of your farm, you can not tell how much you have made during the year.

The State Bankers Association is working with the Farm Management department of the agricultural College and have had printed a book which is simple, yet practical and complete. These books will be distributed free to the farmers in the state and every one should take advantage of this offer.

It may surprise you to learn the cost of producing certain crops, you ought to know the cost, this record will help you to secure it. Send your name to our office or to the Agricultural College, Logan, and one of these books with directions for use will be sent you free of any charge.

THE VALUE OF GOOD, CLEAN SEED.

The three prime essentials in successful farming are: Good Soil, Good Seed and Good Care.

No matter how good the soil; no matter how good the care, if the seed is not good—well selected and cleaned—the harvest will not be all that is expected.

Now is the time for the farmers to look after their seed for the spring planting. It is not good farming policy to wait for another month or so before this work is attended to, because many other important tasks will then demand attention.

After what you may term good seed has been secured, it should then be thoroughly cleaned. The cleaning of seed is considered quite an important task with some farmers, while it is sadly neglected by others.

Did it ever occur to you that often we plant weed seeds, and foreign particles with no life germ at all, when we ought to be planting only grains? Often when farmers think they are planting the correct amount of grain seed per acre, they are, in reality, planting a much smaller amount, as a large percentage of weed seeds and dirt go to make up the measure. This results in a poor stand of grain. It is a law of nature that like begets like; that every seed produces its kind.

In every community there are a few fanning mills which should be put to use at this time of the year. By running the grain seed through the fanning mill a few times, most of the weed seeds and foreign particles, as well as the majority of the inferior kernels, would be removed from the grain. This would leave only good, clean seed for planting.

Now is the time to do this work. A little later on you will be very busy, and a great many farmers will probably want to use these mills at the same time. Start these fanning mills going now and it will be possible for every farmer to clean his seed before planting time.

A few hours spent now in preparing and cleaning your oats, wheat, barley, alfalfa and other seeds, will reward you with a more abundant harvest next fall. It will mean greater profits in dollars and cents, as well as greater satisfaction to you.

Try it.

RELIABLE FARM BARGAINS

12½ acres at Springville, one mile east of the bank. This place was sold two years ago for \$8000. It can now be purchased for \$4500, or will take in exchange Salt Lake City property. Improvements consist of a five-room brick house, electric lights, city water, full cement basement, large barn, good granary, chicken coops and other outbuildings.

80 acres within a short distance of Salt Lake City at \$35 an acre. This place would make an excellent dairy ranch or a good stock ranch. It is capable of keeping 250 head of cattle the year around. They put up 40 tons of hay and there is an abundance of water for irrigation purposes derived from flowing wells. The improvements consist of a 7-room 2-story brick house, hot and cold water, barn to hold 50 head of stock, chicken coop, ice house, dairy house and other outbuildings. There is now between 100 and 200 acres of meadow and the balance is used as pasture land, but is capable of being made into meadow land. This place can be had on a reasonable down payment with good terms.

78 acres of land with a 2-story 8-room house, cow stable, horse stable, machine shed, granary, chicken coop and other outbuildings. This land will rent for \$20 an acre cash rent and is first class for any agricultural purpose. It is within one-half mile of the beet dump and railroad; school wagon passes the door. The land without the improvements is worth \$200 an acre, but can be had for \$162 per acre, including a full water right and all the improvements. A reasonable down payment and ten years on the balance at 6 per cent.


4 acres of land capable of raising first-class sugar beets, having a full water right. Lies on the main county road, one-half mile from the railroad station, at \$125 an acre, on reasonable terms.

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When you answer the advertisement in this paper tell them you saw the Utah Farmer. Always buy priced goods.

CORN GROWING

Getting Moisture into the Soil for Good Corn Yields—Preparing the Land for Planting.

Corn gets what it takes from the soil in liquid form and, therefore, there must be moisture to spare. The actual number of inches of rainfall on a given field, however, is not alone a safe guide, especially in droughty regions, as much depends on the amount of water that is stored at different seasons; the amount that is wasted in runoff, evaporation, or seepage; and, finally, the amount actually made available to the root system of the corn. It has been estimated that a rainfall of 10 inches will be sufficient to produce a 50-bushel yield of corn, provided none of it escaped except through the plants. Even weeds, however, can not take over every bit of moisture and it is impossible under field conditions to prevent losses.

Caution corn growers in droughty regions (1) to plan their cultural operations so as to have the soil surface in best condition to take in water when rains are most likely to occur; (2) so to handle the soil that deep penetration may be secured; and (3) so to cultivate the soil as to store up heat and at the same time prevent excessive loss of soil water through capillary action and surface evaporation.

The ease with which soils take in or retain or lose moisture depends mostly on their texture, physical condition, and surface slope, they point out. It is to the extent that cultivation can modify these factors that more water can be made available to the growing crop.

There are loose, open soils through which water pours as through a sieve, and there are tight, gumbo soils which swell when the surface is moistened and become practically waterproof.

Sandy soils take in water more readily than heavier soils; hence less precaution is necessary to prevent run-off.

The greatest loss may be from seepage to depths beyond the plant roots. Manure and decaying vegetable matter check seepage and improve soils of this character. As corn roots penetrate 3 to even 6 feet deep, larger yields of corn are frequently raised on sandy soils in semi-arid regions than on surrounding hard soils.

The heavy, hard, or close-textured soils require the most cultivation to keep them in proper condition so as to prevent moisture loss from run-off and evaporation. Unless the surface is kept broken or somewhat rough but little water will be absorbed during hard rains and a greater loss will occur from evaporation. To maintain the surface soil in proper condition cultivation is necessary soon after heavy rains. If cultivation is too frequent, however, so that the surface becomes too fine, moisture can not penetrate readily and blowing of the soil is likely to occur.

It is of great importance that moisture be made to penetrate several feet below the surface. In most soils this penetration is slow, and during hot dry weather surface evaporation is great. Surface moisture can not penetrate a frozen soil. Summer and fall precipitation has time to penetrate several feet deep and be in a position to support a growing crop the next summer. While it is seldom advisable to waste a whole summer in storing moisture for a corn crop the next year, it is advisable to begin storing soil moisture as soon as the preceding

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crop will permit. The ideal seed bed for a good corn crop in semiarid regions is one with a loose, coarse surface and a subsoil well filled with moisture to a depth of several feet.

Preparing Land for Planting.

As lack of moisture, more than anything else, limits corn yields in droughty regions, the first question regulating each operation should be, "What will be its effect upon the soil moisture supply?"

The authorities state that while summer fallow frequently results in greater yields of corn, the practice has not proved practicable. They, therefore, advise beginning the preparation of land to prevent loss of moisture and to put the surface into condition to receive moisture as soon as the preceding crop will permit. Cultivation after the removal of the preceding crop is profitable if it stops or prevents a growth of weeds. But if the growing season is past, dead weeds may catch more snow than would be caught by a cultivated surface.

Fall disking, or listing, is usually beneficial in putting the land in better condition to prevent the soil from blowing, to hold the snow, and to prevent run-off. The penetration of moisture is slow, and when rains occur evaporation is rapid from hard soil surfaces, such as usually follow the growing of small grain. The chances of storing moisture are increased by loosening such compact surfaces as early as possible. Whether plowing is necessary, however, depends very much upon the type of soil. Most heavy clay soils are best put in proper condition by plowing. Sandy or light loam soils should not be plowed in the fall and left bare during the winter in

regions where soil blowing is likely to occur. If, however, it becomes advisable to plow such soils in the fall, blowing of the plowed area may be checked by top-dressing with barnyard manure.

Deep plowing should always be done in the fall or very early in the spring, to allow more moisture to penetrate and the soil to settle before planting time.

On sloping land the plowing, listing, planting, and cultivating should follow on a level along the slopes or around the hills.

The moisture saved makes this a profitable practice, and very often the prevention of run-off is necessary to avoid erosion, with the loss of the richest portions of the soil.

Alfalfa land to be prepared for corn should be fallowed one year or plowed early the previous summer.

Growing plants draw large quantities of water from the soil and subsoil. All growth of weeds and volunteer grain on land to be planted to corn should be prevented.

Deep plowing and subsoiling should be done in the fall rather than at corn-planting time. Soil put in the right condition to take in moisture to a considerable depth is also open to the air and dries out rapidly. If necessary to plow in the spring for corn the plowing should be done early and should not be deep and the ground should be packed immediately. Plowing under several inches of snow is an effective and sometimes a practicable way of getting moisture into the ground.

When you answer advertisements, mention the Utah Farmer.

Live Stock

JUDGING HORSE'S AGE

Teeth Furnish Fairly Accurate Indication—Yearly Changes Which Ordinarily Occur.

Until a horse is over 10 years old the teeth furnish an indication of age which is fairly accurate. In estimating the age of a horse, only the three pairs of front teeth or nippers on each jaw are considered. Horses, like human beings, have two sets of teeth; the first set, known as milk teeth, being replaced by permanent teeth. New teeth have deep cups, or indentations, at their centers. As the teeth wear down these cups disappear.

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We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

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A colt does not usually get its first pair of nippers until it is a few days old, but has all three pairs by the time it is 6 to 10 months old. Until a colt is 3 years old, however, its general appearance is relied upon largely to indicate its age. Following is a description of the yearly changes which ordinarily occur in the teeth of a horse.

One year.—The center pair of milk incisors, known as the pinchers, and the pair next to them, known as the intermediates, are well through the gums and in contact, but the corner pairs do not yet meet on a level.

Two years.—The pinchers and the intermediates indicate that they are being crowded by the permanent teeth, as they are pushed free from their gums at the base. By the time the colt is 2½ years old the middle pinchers should be through. The permanent teeth are much larger than the temporary ones.

Three years.—The middle pinchers are large enough to use. Their deep cups show plainly. The milk intermediates are about to be shed.

Four years.—The permanent intermediates appear at 3½ years and are ready for use at 4. The corner teeth give evidence that the permanent canines are coming. The cups in the pinchers are about one-third gone. (The tusks, or canine teeth, of male colts may appear about this time.)

Five years.—The temporary corner teeth are shed at 4½ and the permanent ones are ready to use. The horse has now what is known as a full mouth, all permanent incisors being ready to use. The cups of the first pair are about two-thirds gone.

Six years.—The cups in the center pair have nearly disappeared. In the second pair they are about two-thirds gone.

Seven years.—The cups from the second pair are now gone. There is a notch in the upper corner tooth where it overlaps the lower one.

Eight years.—The cups having all worn out of the lower nippers, we now look at the upper jaw. Although cups remain in the center pair, they are not deep.

Nine years.—The cups in the center pair of nippers on the upper jaw have disappeared. They are still present in the other two pairs, being fairly deep in the corner ones.

Ten years.—The cups are worn out of the second pair on the upper jaw, although they are still present in the corner pair.

Older horses.—At 11 years all of the cups are usually worn out of the incisors and it becomes necessary to use some other indication. Estimation of age may now be based upon the angle at which the teeth meet, their change in size and shape. As the horse gets older, the teeth meet more and more at an acute angle; that is, the jaws become more oblique. As the teeth wear down, the shape of the worn ends changes from oval to more nearly round and, finally, in an aged horse, to a nearly triangular form. Sometimes cups are cut or burned in the teeth of old horses to make their mouths resemble those of younger animals. This practice, known as "Bishoping," may be detected if the shape of the tooth and the absence of the ring of enamel which surrounds the natural cup are noted. After a horse is 12 years old its condition is more important than its age in determining values.

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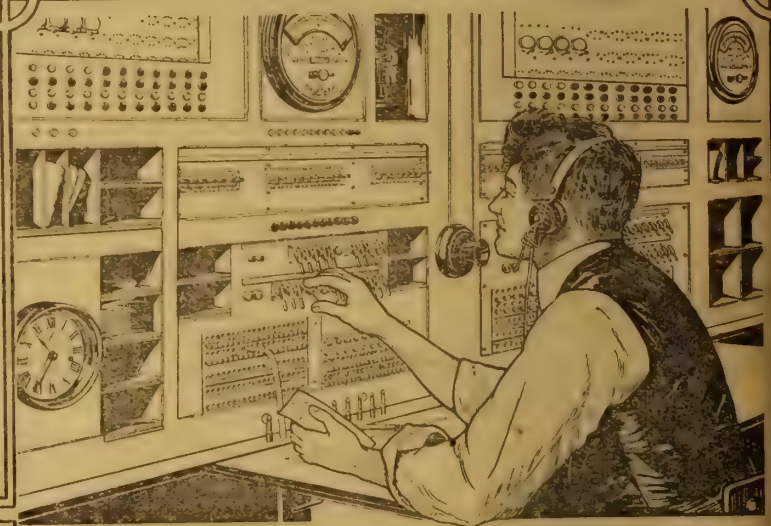
The Avery line includes five regular size tractors—8-16, 12-25, 18-35, 25-50 and 40-80 h.p., and special 12-25 h.p. Plows and Threshers in all sizes. 1 Two-Row Motor Cultivator. Write for a free copy of the new 1917 Avery Catalog and name of nearest Avery dealer.

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Seed Specialists, Waterloo, Iowa.

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When you answer advertisements, mention the Utah Farmer.

FARMERS IN POLITICS

By Jake Miles.

Farmers of Utah, have you got your eyes on North Dakota? Do you see what your fellow husbandman have accomplished up there in two short years? The state political bosses tread once too many times upon the toes of the tillers of the soil; they turned, and on November last captured the entire state. With one exception the "Farmers' Non-Partisan Political League" elected every candidate on the state ticket.

The last straw which stirred the blood of the farmers to united action was this: There had been enacted a few years previously an amendment to the state constitution permitting the establishment of state-owned terminal elevators within North Dakota. At the 1915-16 session of the legislature the self-important solons refused to carry out this provision for community elevators. They went so far as to repeal the tax provided to raise the necessary money to build the first of a proposed chain of elevators throughout this great grain state.

The smug legislators then sat back in their easy chairs smiling at how simple it all was. They thought the event had passed pleasantly into history, the same as it had in scores of somewhat similar feats. Not so. At least two men, good and true, had been thoroughly roused. A. C. Townley and F. B. Wood, both practical farmers with no previous political experience worth mentioning buckled on their armor. And thus the Farmers' Non-Partisan Political League came into existence. A little bunch then got their heads together and out of it came the main plank in the platform: "We stand for state elevators, state flour-mills, state packing-houses, state hail-insurance and state rural-credit system."

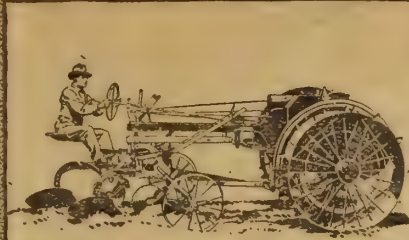
By last November there was an enrollment of 60,000 membership in the league meant you were an actual tiller of the soil. The organization triumphantly elected a governor, Lynn J. Frazier, a farmer, three members of the supreme court of the state, and controls the legislature this winter.

The league is spreading like wild fire into South Dakota, Minnesota, Iowa, Montana and other states. In a few years it is expected to dominate the great agricultural states of the west. And why not Utah, if the farmers are in the majority? You saw how money and cleverly handled publicity last fall pulled wool over the eyes of the populace in the tax amendment proposition. It was but one of many and our taxes on the little home and farm remain in comparative disproportion.

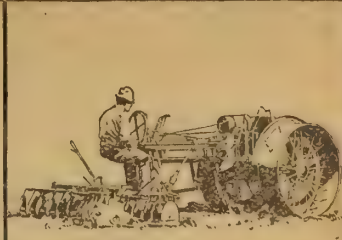
Looking a little farther back of the righteous rise in 1916 of the North Dakotan is the fact that the regulation of the price of the farmers' crops rests not with the farmer, but with the stock speculator and the gambler. There are a few score men in Chicago, some of whom probably could hardly tell the difference between a threshing machine and a fanning mill, men who under the present palpably wrong conditions have more to do with the regulation of the price of wheat in America than the ten million farmers.

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It should provide for raising a legume.



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PLANTING



DRILLING



HARVESTING WHEAT



HARVESTING CORN

It should encourage the keeping of live-stock.

It should put a penalty upon slipshod, careless methods.

It should insure the tenant—in the event of his removal from the farm—against losing the value of manure or fertilizer recently applied and of legumes and grasses recently sowed. In addition to the foregoing essentials, the lease should be written with reference to the particular farm in question. No perfect form of lease can be written to apply to all conditions.

POULTRY

WINTER EGG PRODUCTION.

By Alfred R. Lee, U. S. Department of Agricultural.

The production of eggs in winter from pullets, and to some extent from hens, can be greatly stimulated by good methods of feeding, housing, and handling. Very few eggs are secured on the average general farm during the fall and early winter, when eggs bring the highest prices. Poultrymen, however, by better management secure a fair egg production during these seasons. The object of this paper is to point out methods of management which will help to increase winter egg production.

To receive good results from a flock of poultry during the winter all houses

and coops should be in good condition, only healthy fowls placed in these buildings, and good care given to the poultry. These houses should be thoroughly cleaned, disinfected, and made tight for winter. If the house has a dirt floor it is well to remove the top 3 or 4 inches of dirt and replace this with dry gravel or sand. If it has a cement or wooden floor, remove all litter and dirt and put in 4 or 5 inches of fresh straw or litter. Be sure that the house is tight on three sides and that there is no chance for a draft to strike the hens. If hens roost or are placed in draft during the fall and winter, colds are sure to develop, which may result in roup and other troubles. From one-third to one-half of the south side, or front, of the poultry house may be made of curtains and windows, but should be under control, so that the openings may be closed gradually as the weather becomes cold. Have muslin curtains in the front of the house or leave a window partly open, even on the coldest nights, to allow some ventilation in the house. Fowls will stand considerable cold air provided it is dry, and ventilation will keep the air thoroughly dry in the house.

Before the pullets are mixed with the older fowls be sure that the hens are banded or that the web of the foot is punched in some way so that you can distinguish between the pullets and the hens. In this way the older stock may be culled out whenever it appears desirable, and the young hens kept for further laying. Do not keep

(Continued on page 16)

My Experience With Turkestan Alfalfa

Salt Lake County, Utah, Jan. 23, 1917.
Editor Utah Farmer;
Lehi Utah.

Dear Sir:—In your issue of November 18th, 1916, there is an article headed—"Commercial Varieties of Alfalfa." I have hoped that some one would have noticed and replied to it before this as it would be unfortunate to allow so much misinformation to go as true; but as no one has I shall call attention to some of its mistakes.

In the second sentence of the second paragraph it says—"The dry land alfalfa seed offered on the market has so far failed to show any noticeable superiority in ability to resist drought over that grown with an abundance of

moisture." Ans: The U. S. Department of Agriculture Bulletin 339 page 38 says: "Dry-land alfalfa is the name usually given to ordinary alfalfa seed produced for one or more generations in the semi-arid sections without irrigation. It is proving somewhat superior to ordinary alfalfa under semi-arid conditions, and as a drought-resistant alfalfa is about equal to Turkestan alfalfa and sand lucern."

It can be assumed that the U. S. Department of Agriculture is a better authority than any one who talks in general terms and who does not give his experience.

In the third paragraph of the same article the writers says: "The commercial Turkestan alfalfa has been quite thoroughly in all parts of this country and in nearly every case has proved inferior to American-grown strains."

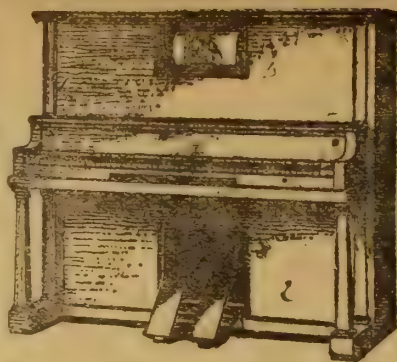
This is a very misleading statement; and what is meant by "American-grown strains" when nearly all the alfalfa strains are grown in the United States?

In the bulletin named above page 37 the U. S. Department of Agriculture says: "Turkestan alfalfa was introduced into the United States in 1898, and has since been tried in all parts of the country. It has been found to be superior to the ordinary alfalfa in only limited sections. It is decidedly inferior in the humid sections east of the Mississippi River, but has given somewhat better results than the ordinary alfalfa in the semi-arid portions of the Great Plains and in the Columbia Basin. In addition to its drought resistance, it is also harder than many of the commercial strains."

Utah is in that "limited sections" above referred to. In the fourth paragraph of the same article the writer excepts "Sand-lucern" from the hard cold resisting varieties of alfalfa. The U. S. Department of Agriculture in the same bulletin at page 37 says: "The sand lucern has been grown for a number of years in this country. It has been found to be adapted to the colder and dryer sections of the country, where it is proving the equal of any of the alfalfas under test. It seems particularly adapted to withstand cold winters of the Northern States, where ordinary alfalfa is very likely to winter kill. It is especially recommended for conditions where ordinary alfalfa does not succeed by reason of high altitudes, light rain fall, or severe winters."

In the same article the writer says: "Plump seed of an olive green color almost invariably germinates well, while shriveled or brown seed generally germinates poorly."

It would be unfortunate if the seed farmer should accept all of this statement. "Green seed" is immature, "shriveled seed" did not have moisture enough to mature, "brown seed" is old or was improperly harvested. "Green seed" near the ripening point will germinate, but germination is not all. The young plant must be backed by a seed of such a complete development and substance as will furnish a strong foundation for the young plants like and growth. A "Green seed" rots quicker in the ground and any thing immature has a less chance of life. My experience is that one ounce of bright yellow seed properly ripened



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Refiners
Salt Lake City, Utah

and properly harvested will produce more plants that live through August, than one and quarter ounces of seed that was harvested a little too early or a little too late. Upon this point the Government Bulletin above referred to is in line and can be read with profit.

As to the Turkestan alfalfa, that the writer of the article so much condemns and the Government commends, I have to say that after thirteen years experience with it I believe it is the alfalfa best adapted to our climate and soil of any of the strains. It will not thrive with out care, no, no, like every living thing it

can be killed. Its not "Fool proof." The common kind will stand less draft and more water. The Turkestan will stand more alkali, more drought and more cold. It has a fine stem, full of pith and an abundance of leave. It stands closer on the ground and makes the "choice" grade of hay. It has sold from \$1.00 to \$2.00 more per ton, than the common kind, on the same market. I have one lot sowed thirteen years ago and after discing and harrowing it for years I made thin enough to raise seed this last year and it yielded 515 pounds clean seed to the acre.

Three years ago I did not get as

water for the first crop. The Turkestand alfalfa yielded more than two tons to the acre; while my neighbor, across the fence, got only about one ton to the acre of the common kind of alfalfa. I have raised as high as eight tons to the acre of hay, of the Turkestand, and six years ago the State Statistician, after investigation, said it was superior to any field of hay in the State. These tons were not measured by guess or by the tapeline; but on a first class wagon scale here on the farm.

My experience is that the home grown Turkestand alfalfa seed is stronger and will produce a thicker stand, pound for pound, than the common kind of alfalfa. I sow ten pounds for hay and six pounds for seed. Last spring a neighbor got Turkestand seed from me and his neighbor sowed the common kind. They sowed at the same time. The seed of both came up. A frost came. The common kind was nearly all killed. The Turkestand was not preceptively hurt.

The Turkestand alfalfa must be cared for differently, in the irrigation, than the common kind, but from my experience with it and the experience of others who have thoroughly tested it in this part of the state, I am convinced that the Turkestand alfalfa is the best alfalfa in Utah for either hay or seed.

Respectfully,
A. T. Lawson.

CAREFUL WINTERING REDUCES BEE LOSSES

H. M. Fort.

The importance of care in wintering bees cannot be overestimated. Throughout the United States beekeepers lose at least ten per cent of their colonies, and in many cases as high as fifty per cent, due largely to carelessness and a lack of knowledge of proper wintering conditions. This loss is avoidable and should be reduced to less than one per cent if a few simple precautions are heeded.

Bees cluster at a temperature of 77 degrees or lower to keep up the temperature of the hive and to reduce the radiation of the heat produced by muscular exertion. Energy for the muscular exertion is furnished by food.

Losses in wintering are due largely to insufficient or inferior food; lack of protection; loss of the queen.

Sufficient food is essential. Every colony should have at least thirty pounds of honey. White clover honey is best although any white honey is good. Dark honey should be used sparingly; and honeydew honey not at all, on account of the waste it contains. Bees never deposit fecal waste in the hive, but retain it in the large intestine, where it causes dysentery unless soon passed out. In attempting to rid themselves of this, the bees fly forth on cold days, become chilled and never find their way back.

Lack of protection does not kill directly and this fact has caused some beekeepers to imagine that bees needed no winter protection. Lack of protection causes a loss of heat, consequently more heat must be generated by muscular exertion and more food must be eaten to supply the energy. This overeating causes dysentery and other intestinal disorders harmful to the colony, which may die or come through the winter too weak to produce much surplus honey.

Protection may be given by cellar

wintering or by insulating the outdoor hives. The cellar should be dark, dry, well ventilated and kept at an even temperature of about 45 to 50 degrees. Hives may be insulated with a chaff hive, several thicknesses of tar paper, several inches of leaves, straw or excelsior kept in place by boards, wire netting or a packing case. An exit in all cases is necessary. Weak colonies are best wintered several under one cover and separated only by wire screen.

If from any cause the queen dies or if incapacitated in winter, the colony has no means of providing itself with another, and must soon die. The beekeeper should see that every colony has a vigorous young queen before going into winter.

INVESTIGATE FARM MACHINERY

This is an age of improvement. The up-to-date farmer must read and investigate or he cannot be abreast of the times. There is no class of business or enterprise that is moving faster today in the matter of improvement than the farm, the appliances and machinery that are used to operate it economically and successfully. The progressive farmer must read, study and observe the things of interest that are being created for his advantage and for the enhancement of his financial interests.

Farm machinery, without doubt, stands prominently in the front rank of the needs of the farm. It will not do to stand back and say, "I have a cultivator"—or other piece of machinery—"that is good enough," just because it has been in use only two or three years, when great improvements in operation and perfectness of work have been supplied by later patents. Be on the lookout for the new machines. Inspect the advertising columns of your farm papers in view of seeing what there is that is new and deserving of investigation and inquiry.

You will find cultivators representing shallow cultivation and others deep cultivation. Study their principles of operation and results, and when convinced that they are better than what you have and are working with, estimate whether or not you can afford to keep on using the old machine. Remember that perfect cultivation in the cornfield is the big factor in getting the yield. These things are important and cannot be carelessly passed by.

TWO PLANS OFFERED FOR RAISING DAIRY CALVES

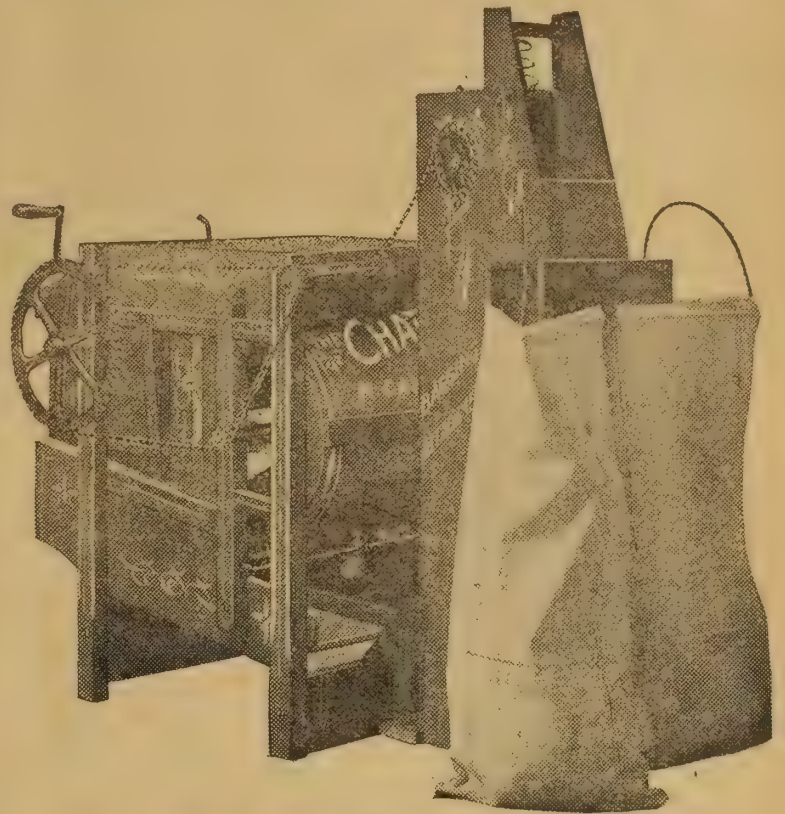
L. W. Wing, Jr.

Probably the best way for the dairyman to maintain and build up his herd is to raise his heifer calves. If his foundation cows are good producers and if he uses a tested sire he can be reasonably sure that the heifer calves will be good producers. But with the fast advance in prices of land and farm products, the expense of raising the calves is increasing. When the young were allowed to suckle their dams no such conditions existed, but this practice is no longer economical.

Two general plans for reducing the cost of producing calves are suggested. Where cream is sold the calves be fed whole milk for the first two or three weeks and then gradually changed to skim milk. The whole milk should not be fed, even to the largest calf, in excess of three quarts or about six pounds at a feed twice a day. The small calf, such as a Jersey, does not need more than two

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quarts at a feed. When larger amounts are given scours are apt to result. After the calf has been changed to skim milk the amount may be increased gradually to 14 or 16 pounds a day. Such feeding should be supplemented with grain, preferably ground corn or a mixture of three parts of corn and 1 part of oats by weight. Calves should be allowed to nibble hay as soon as they begin to eat grain.

The farmers who sell whole milk have another problem. Experience has taught that the only method of replenishing a herd and advancing production is to raise the heifer calves. The plan in general use at present is to feed a minimum amount of milk along with grain or to give the calf a good start and take the milk away after about two months, and then put the calf on a grain ration.

FREE INTERPRETATION

"I see you are presenting 'Hamlet' to the public this week."

"Presenting is the right word," assented the manager. "Nothing but deadheads in the house."—Louisville Courier-Journal.

W. W. Jackson, the hustling representative of the Coggins Marble Company of Canton, Ga., was in town this week, and says he is glad to note that the tombstone business is picking up right along, and he hopes it will continue so.—Pensacola Journal.

BAND INSTRUMENTS



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DAYNES-BEEBE MUSIC CO.
SALT LAKE CITY

AGRICULTURE AS A PROFESSION

(Continued from page 3)

loveliness and varied colorings: when we hear the lowing of the cattle on the verdent hills and view with delight the flowing fields of ripening grain; and all in the open country, away from the brickeries and deceit in the cities where men congregate and pursue their games of graft; what thoughtful man is there, with any sense of independence and desire for the wholesome and the good, who would not sigh to get back to the soil and have nature in all of her bountifulness for a partner?

And above all, the perfect farmer, if he loves his profession, is every day occupied in pursuing the highest and most beautiful science that man ever studied, and of performing the highest service to himself and to the world, for when man was given dominion over the earth the gift carried with it the promise, that if the earth was ardently enough wooed, it would give up to him all its divine secrets and yield to him generously of its unmeasured wealth.

Send for Butter Wrappers today.

HOME

SICK ROOM DIET AND SERVICE OF FOOD.

Gertrude McCheyne.

One of the first things to be remembered about feeding the sick is that they need about as much fuel to supply the requirements of the body as under the same conditions in health. A rest for the digestive tract is often good during the first days, but the machinery of the body is at work and the need for fuel is there. Miss Rose in "Feeding the Family" says that a man of average weight lying in bed will need about 1850 heat units a day. The point is to supply food that will not too greatly tax the digestive organs and will supply body needs.

Fluid Diet

This is easy of digestion and may consist of:

Broth; clear soups, plain or with eggs and cereal gruels; beef juice; cereal gruels.

Milk—plain, peptonized, gelatinized, combined with eggs as in eggnog.

Cocoa; cream soups; fruit juices.

Of all the above milk is of the greatest value. One cup of milk yields 170 units of heat, and a whole egg added yields 70 units of heat. Fruit juices are refreshing and yield good fuel values. Half a cup of grape juice gives 100 units of heat. Soft or Semi-solid Diet.

This diet is a progressive step leading to a convalescent diet. The foods used in a fluid diet are still available but with the addition of solids. In changing diet the effect on the patient must be watched and if any digestive disturbances occur, simpler foods must again be used.

The semi-solid diet may consist of: Milk combined with eggs in the form of custards. These may be

baked, steamed, flavored with fruit juice, and in some cases spiced.

Fruit pulp in the form of cream whips and souffles'.

Eggs, soft-boiled, poached and as omelets and souffles'.

Blanc mange, ice creams, gelatins and junket, using various flavors so as to avoid monotony.

The convalescent diet adds to the above mentioned foods, meat, fish and vegetables. However, the nature of the illness and condition of the patient must be the guide as to the method of introduction.

In general it may be said that:

To milk soups may be added the pulp of vegetables, at first strained. Gruels may be thicker. Cereals may be served if thoroughly cooked. White fish, chicken, mutton chops, with potatoes mashed, rice or baked; creamed vegetables such as asparagus, peas, spinach. Perhaps the greatest change is in the number of dishes served at one time.

The cookery for the sick and diets for special cases will be treated in later lessons.

Service of Food

This is of as great importance as the food itself, because an uncomfortable patient and ill served meal will destroy what little inclination there may be to eat.

The patient should be prepared for the meal before the tray is carried to the room. If it is the first meal of the day, the hands and face should be washed and hair combed back. Later a dampened cloth and towel will suffice to give a feeling of freshness. Eating in bed is not a comfortable operation at the best of times. The handiest way is to have an adjustable table that sets over the bed and on which the tray can be placed. Failing this, an extra sheet should be tucked over the bed clothing and around the patient, thus avoiding crumbs falling in the bed. A stiff pillow placed at the back and smaller ones at the sides, serve as a support. In case of long illness, a box padded and covered may be slipped against the foot board and serve for a support for the patient's feet and prevent the sensation of slipping down in the bed.

The tray should be covered with a clean cloth and contain napkin, glass of water, and enough silver for convenient service. Glasses and cups should not be entirely filled, and small portions of food should be served. Bread and toast should be cut thin. Lukewarm food is very unpalatable. Meals should be served on time. No food should be left standing in the sick room. If possible, avoid asking a patient what they would like to eat. The element of surprise is often an aid to appetite.

INDIVIDUAL RECIPES FOR INVALID COOKERY,

Omelet

2 egg yolks, 1 egg white, beat till thick.

½ tsp. salt.

Melt ½ tsp. butter in small pan. Shake over moderate fire, pricking with fork; brown lightly, fold and serve on hot plate.

Meat Balls

Scrape flesh from ¼ lb. sirloin of beef. Season and roll into balls about the size of a marble. Broil balls in a very hot pan till they are browned. Serve on small pieces of toast.

Apple Snow

4 tbsp. strained apple sauce.
1 tsp. lemon juice.

Add a Few Years to Mother's Life

The human engine is like any other piece of machinery—it will stand a certain amount of wear and strain. The more drudgery we are able to take from mother the longer will be her stay with us. Order—

ROYAL BREAD



The bread that made mother stop baking



for every meal. Insist that mother stop baking. There's no need of it, with good bread like Royal Bread, so easily obtained, fresh every day, from your grocer. Made of the choicest ingredients in a clean, sanitary bakery.

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DOUGLAS, WYOMING

1 egg white, whipped stiff.
Fold in apple sauce, chill and serve.

Potato Puff

2 medium sized potatoes boiled and mashed with a fork
2 egg whites, beaten stiff. Fold into potatoes, bake in moderate oven till lightly browned.

Macaroni With Egg

½ cup macaroni cooked till tender. Cut into small pieces. Line individual dish in form of nest. Break in an egg, place in oven and bake till egg is lightly done.

Tomato With Egg

Cut top off a tomato, scoop out sufficient pulp to make room for an egg to be dropped. Cover with top and place in a baking dish. Add water up to about one-third of the dish. Bake till egg is lightly done.

The Correspondence Department is putting out a new course in nutrition for use of families. This will be conducted by Dr. R. O. Porter of the College and is free to all. The lessons will include some physiology of digestion, foods, their use to the body and preparation, and the question of sex hygiene. The work will be done in a systematic manner, the papers being carefully looked over and notes made where the answers are not correct. Questions are invited from those taking the course. This is a great opportunity for women who cannot attend college.

Notice appearing in a Minnesota newspaper:

I have been instructed by the Village Council to enforce the Ordinance against chickens running at large and riding bicycles on the sidewalk.—Harry Shells, Village Marshal.

It's Good Judgment

—to insist on an article you know to be the peer of the market. "Utah-Idaho" is the standard of sugar perfection.

Why not favor this home product? It is impossible to make sugar purer, whiter or sweeter than Utah-Idaho Sugar.

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The groom is a bartender in Niles, and is surrounded by a large circle of friends.—Warren Tribune.

USE APPLES IN MAKING MANY A TOOTHsome DISH

Apples have long been, and still continue to be one of the best of "fruits in season," and one of the chief dependences of the American housewife in the preparation of toothsome desserts to tickle the palate and stimulate the health.

Here are a few apple recipes:

Fried Bacon and Apples.

Place bacon on rack in dripping pan. Dripping pan should have enough water to cover bottom. Place in hot oven, cook until bacon is brown and crisp. Slice cored, unpared apples. Heat bacon drippings in pan, lay in the apples, sprinkle with sugar, cook in the oven until brown. Serve bacon on platter surrounded with apples.

Apple Shortcake.

To two cupfuls flour are added one-half teaspoonful of salt, four teaspoonful of baking powder, one tablespoonful of sugar and one-half cupful of shortening. Mix as for baking powder biscuits. Fill pie plate with sliced apples, cover with the crust. Bake until apples are tender and crust is thoroughly baked. Turn on plate, dot with butter, sprinkle with sugar and cinnamon. Serve with or without cream.

Apple Sauce Cake.

Mix one cupful apple sauce, unsweetened with one cupful sugar, one-half cupful shortening, one teaspoonful cinnamon, one-half teaspoonful soda and two and one-half cupfuls or more flour.

Steamed Apples.

Pare and partly core apples. Do not remove the blossom end. Place apples in steamer and fill with butter, sugar, and cinnamon, or sugar, cinnamon, and lemon, or candied ginger. Serve with meringue or whipped cream.

A WORD ABOUT SAVING

Children are naturally wasteful, and if unchecked will surely develop into extravagant men and women. It is simple enough to teach a child to eat all that is put upon his plate, to save his pennies and to put away wrapping paper and string where they can be found when needed. I know plenty of grown-ups who are never able to lay hands on a bit of paper or string, who never save boxes of any kind and whose wastefulness in other ways is marked. The woman who boasted that she never wasted a crumb of bread was one of the number for she fed her family on bread pudding until the men rebelled.

I think it best to practice economy in places where it does the most good. I would rather give my family a variety of dishes or rather change the menu frequently, than to try to save only one thing and in doing this make the family tired of it. With the high price of flour one must be very saving of things that require much of this commodity. I have a number of ways of utilizing dry bread, and by having something different at nearly every meal I have no trouble in using to good advantage all of the crusts and scraps as well as the dry pieces.

I was at a neighbor's the other day and I watched her working up meat scraps, left-overs in vegetables and dry bread. She surely knew the art of using left-overs. I thought I was pretty good at it myself, but she gave me some pointers that I had never dreamed of. I asked her where she got the idea and she said "mother taught me this." And thinks I to myself, that mother deserves lots of

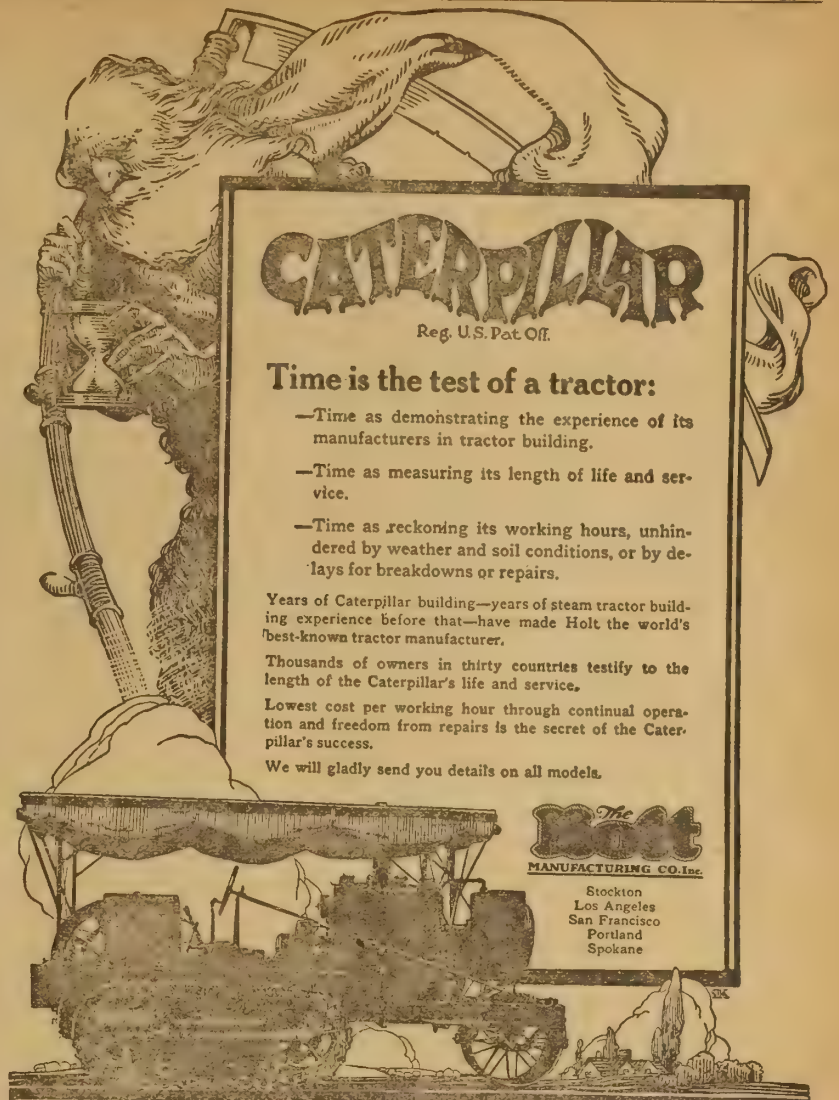
credit. And there are other mothers who know a lot about saving if you can just get them to tell about it, but it is so common to them and has been a custom so long that they think everybody knows all about it already, but there is just where they are mistaken. Mothers should teach their daughters how to utilize the left-overs because the knowing how to do this is what distinguishes the economical housekeeper from the shiftless one.

Of all things that should be avoided in these days of high living a fat swill pail is the most important. We waste enough from the average kitchen in this country to afford a feast for the starving people in less favored lands.

ARE YOUR HANDS CLEAN?

Average adult, grown-up baby, does things with hands worse than infant with thumb in mouth. One of the first voluntary acts of a baby is to stick his thumb in his mouth. A little later this habit is discontinued but still the child soils his mouth with his dirty hands. Men and women are but children of a larger growth and are guilty of indiscretions in this connection which, when we come to think of it, are almost revolting.

"Disease germs lead a hand to mouth existence. If the human race would learn to keep the unwashed hand away from the mouth, many human diseases would be greatly diminished. We handle infectious matter more or less constantly and we continually carry the hands to the



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- Time as measuring its length of life and service.
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mouth. Many persons wet their fingers with saliva before counting money, turning the pages of a book, or performing similar acts. In this case the process is reversed, the infection being carried to the object handled, there be await carriage to the mouth of some other careless person. In view of these facts, the U. S. Public Health Service has formulated the following simple rules of personal hygiene:

"Wash the hands immediately before eating.

"Before handling, preparing or serving food.

"After visiting the toilet.

"After attending the sick.

"After handling anything dirty."

Mrs. I. C. Booth arrived this afternoon from Blanchardville, where she has been the last two weeks giving a sewing machine recital.—Monroe Sentinel.

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Our wonderful manufacturing and shipping facilities enable us to reach you wherever you are.

Buy your L. D. S. Garments from the manufacturer,—It will save you money.

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YOU ARE GOING TO BUY THAT FARM THIS SPRING

That you have looked forward to so many years.

Look at this exceptional buy before you make your selection.

Space does not permit us to tell of the many things that must be seen to be appreciated.

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YOU NEED THIS FOOD

When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

A SERIOUS PROBLEM

The farmers of Utah County have no problem which should be attacked with more determined energy than that of providing more fertilizer for our farms. It is a conservative estimate to say that only 60 per cent of our cultivated area received ample manuring last year. Our sugar beet acreage of 1916 was 15,000 acres, which was an increase of more than 1,000 acres over 1915, while 1915 showed a similar increase over 1914. In face of the normal increase to be expected in 1917 plus the added impetus of a good advance in price for beets, it is safe to say our acreage will be very materially enlarged. Now what are the chances for a greater production of fertilizer for this new land? The number of head of our range stock has necessarily reached a stationary limit because of the forest reserve regulations. The number of dairy animals decreased about 1,000 head from 1915 to 1916 and a greater decrease will be noted for 1917. Our horses remain about the same. These facts show how serious the problem of maintaining our soil fertility really is.

If our farms are to retain their productivity, here are a few "musts" which Utah County farmers should heed:

1. We must have more live-stock.
2. We must prevent the waste in our manure which comes through burning and loss of the urine.
3. We must get to using manure spreaders.

More Live-stock.

Our only expanse lies in the dairy industry. Dairy cows will prove a very valuable asset on any farm even if one should just "break even" with them. The fertilizer produced in a year from one dairy cow under our conditions has been found to be worth from \$15 to \$25. But there is money in the dairy industry if you get cows of the right sort. Our drawback in the dairy business is in the scrub grade of cows we milk.

Prevent Waste.

Every farm should have a cement bottomed manure pit and a drain into it to preserve the urine—the most valuable part of an animal's excretion. Enough coarse material should be thrown in also to absorb this. The pit or bin should be provided with a cover to prevent too much evaporation.

The Manure Spreader.

The ideal way in which to apply manure would be to grind it as fine as flour, when it might be mixed with the soil easily and thoroughly. Of course this is out of the question on account of the expense it would involve. The next best way to apply it is by means of some implement that will deliver the manure evenly over the soil and as fine as possible. The modern manure spreader answers this demand. Tests made at the Ohio and Iowa Agricultural Experiment stations proved that the proper application of manure with a spreader increased the yield of corn 17 bushels per acre more than from land where manure was applied in the old way.—Utah County Farm Bureau News.

Why not get busy now and haul the gravel and sand for that silo you will build next summer? You have the time, the horses need exercise, sleighing is good—in fact at no time can this material be brought to your silo location any cheaper than right now.

IRRIGATORS' QUERIES ANSWERED

O. W. Isrealson, U. A. C.

How do you determine the total annual need; that is, the amount of water which a given crop needs per year.

The total annual need is determined by a number of different means; the three most important of which are as follows:

(1) Many studies have been conducted throughout various parts of the United States and Europe, on the so called "Water Requirement of Crops." These studies have been reported on the basis of so many pounds of water being required to mature one pound of the various plants studied. It is a simple matter to determine from these investigations the total depth of water which is needed annually. This, however, is open to some objections, namely; that the determination is not made under ordinary field conditions, and cannot therefore, be expected to give strictly accurate results. However, when due allowance is made for ordinary evaporation losses, which have been measured in many experiments, these results have frequently indicated in advance the water requirement of a crop within an accuracy of ten or fifteen per cent.

(2) The total amount of water needed each year has frequently been determined by direct experiment in the field. Many such experiments have been conducted throughout the various western states during the past quarter of a century, and it is now possible to say in advance very closely how much water is actually needed by different crops.

(3) A third method of determining the total annual water requirements of different crops is that of observing the experiences of the best irrigators. It frequently occurs that excellent yields are obtained by the use of fifteen to eighteen inches depth of water, whereas larger quantities of water give smaller crop returns. Even though these indications are not a result of careful field experiments they are of great value in determining the total water needs, and should be given considerable attention.

QUESTION AND ANSWER

Eureka, Utah.

Utah Farmer:

Gentlemen:—Will you please give me the information covering the best forage crops for dry land farming? Have you any data on hand concerning Sudan Grass? Thanking you in advance I am


Very sincerely,

G. D. Wilsey.


Answered by F. S. Harris.

It is very difficult to get a forage crop that does well under dry-farming. The conditions required for the best production of forage crops are almost the opposite of those found on the average dry-farm.

In the hotter dry-farm sections a number of crops belonging to the sorghum family such as milo, maize, fetereta, etc., do well and make good stock feed. In some sections corn does fairly well, in other alfalfa can be grown to good advantage, while Bromus inermis has given fairly satisfactory returns under some conditions. Probably the most promising new forage crop for the dry-farm is Sudan Grass. This however does not do well in cool climates, where peas and oats planted together are often profitable.

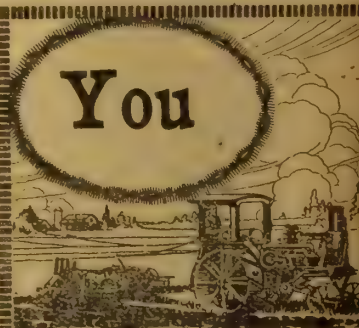


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You should have a successful Avery "Light Weight" tractor. You need it to keep your land well cultivated and make money out of your farm.

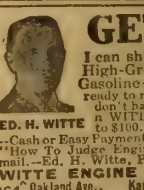
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WINTER EGG PRODUCTION

(Continued from page 9)

hens for egg production over two years, but some of the best hens may be kept for breeders until 3 or 4 years old. The pullets that mature early in the fall and that molt late are usually the best layers and should be saved for breeding stock. Cull the chickens which are brought into the laying house carefully, and fatten and market all chickens which are small, poorly developed, or in poor condition. These small, poorly developed chickens are apt to catch cold if put in with the other poultry and develop diseases which quickly spread through the flock.

In order to get the greatest egg production in the early fall and winter it is essential to have well-matured pullets which were hatched in March or April. By early hatching and by supplying good conditions for egg production more eggs will be produced in the fall and winter, while a larger proportion of hens will go broody early in the spring, thus completing the necessary circle for early fall egg production.

Feed the grain in a deep litter on the floor and make the hens exercise for all of their grain. The mash may be fed either wet or dry, and should be so regulated that the fowls will get about equal parts of mash and of the scratch grains. It is necessary to give the fowls plenty to eat to get good results, but the birds should always be eager for each feed. In cold weather feed about one-third of the scratch grains in the morning and two-thirds at night, in which way the hens are forced to exercise more than if given all the grain they desired at the morning feed. Scratch grains, mash or ground grains, animal protein, green feed, grit, and shell, should be supplied in the winter. Good scratch mixtures may be made of equal parts, by weight, of cracked corn, wheat, and oats, or of two parts of cracked corn and one part each of wheat and oats. If wheat is relatively very high in price it may be left out of this latter mixture. In addition a mash made of three parts corn meal and one part each of wheat bran, wheat middling, and beef scrap should be fed. Green feed, such as cabbages, mangel wurzel beets, cut alfalfa, or sprouted oats should be fed during the winter to replace the green feed which the fowls have been securing in the fields; and beef scrap, skim milk, cut green bone, or some similar feed is needed to replace the bugs which the fowls have been securing on the range.

Beef scrap or feed of this nature is very essential in securing a good supply of eggs during the winter months and is the one essential feed often omitted by farmers. In the experiments conducted by the department an average production of 415 eggs for the first four months from pullets fed a ration containing beef scrap was secured, compared with 187 eggs from pullets fed the same ration without the beef scrap. The pullets not fed beef scrap practically stopped laying whenever the ground was covered with snow. The feed cost of their eggs was 2.2 cents higher per dozen for the year than for the pullets fed beef scrap. Skim milk or butter-milk will largely take the place of beef scrap, if a constant supply can be kept before the fowls, but if the supply of milk is limited some beef scrap should also be fed.

People raising poultry as a side

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you will be convinced because you will have the evidence right before you. The results of the test will carry conviction better than all the arguments or promises we might present. If you really wish to know how to increase your profits, just try this plan now.

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issue in towns and villages can utilize waste products from their table and kitchen to very good advantage, producing fresh eggs and poultry for their own use as well as some surplus for market. As these scraps contain some waste meat, the proportion of beef scrap in the mash can be reduced accordingly. These table scraps can be mixed with the ground grain and fed as a moist mash.

Clean the dropping-boards at least once a week, and spray the roosts once a month during the winter with kerosene or some commercial preparation for killing mites. Have a

good supply of sand or dry dirt on hand to use on the dropping boards during the winter.

If any of the birds develop colds, put as much potassium permanganate as will remain on the surface of a dime into gallon of water and keep this material in their drinking water for several days, or until the symptoms of the colds have disappeared. Remove any sick birds from the flock as soon as noted and treat them in coops by themselves or kill and bury them if they are not worth treating.

Examine the pullets and hens for lice and dust thoroughly with a good

insect powder or apply a mixture of equal parts of vaseline and mercury or blue ointment, applying a pea about the size of a pea 1 inch below the vent of the bird, rubbing the mixture lightly on the skin. An application of this ointment two or three times a year will keep the fowls free from lice. Where insect powder is used, it should be applied three or four times a year, or oftener if the fowls become infested with lice. Provide a small box in the house, partly filled with dry road dust or fine dirt, in which the hens may dust themselves, thus helping to keep free from lice.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 28

LEHI AND SALT LAKE CITY, UTAH

FEBRUARY 10, 1917

Raise More Sugar Beets

By F. S. Harris, Director, Utah Agricultural Experiment Station.

Few beet farmers stop to consider just what the sugar-manufacturing business means to the community as well as to them individually. They all have plenty of opportunity to find out that beet-raising calls for a lot of good hard work. Of course, they experience that comfortable feeling that comes when the beet money is received, but they usually do not consider what a difference it would make to their welfare if there were no beet money.

Some of the reasons why beet-raising is benefit to the entire community are: First, it provides a crop, the marketing of which can absolutely be depended on at a known price for cash at harvest time. This fact has a wonderfully balancing influence on the price of land and its rental value. It immediately reduces the speculative element in land values by establishing a mark by which the intrinsic value of the land may be judged.

Second, sugar beet raising provides work for a large number of people at a wage; particularly does it give profitable employment to children during the season when they are in school and might otherwise be

Third, the sugar factory provides work during the winter, when farming is not rushing, for the extra hands that are needed during summer time, thereby maintaining a higher standard of wages during the winter in farming communities.

These are only a few of the advantages of the sugar industry to the community as a whole.

Among some of the advantages of beet-raising to the individual farmer are:

First, the farmer is given a cash crop which enables him at the close of the year to discharge accounts that have accumulated during the expensive summer season. He is also able to purchase for cash many of

received by beets is beneficial to any crop that follows them.

Third, beets use water when it is not in such great demand for other crops like wheat; they also require labor at a time when the farmer is not busy with grain or hay. Thereby they help to make it possible for the farmer to furnish profitable labor for himself, his hired help, and his teams during the entire season.

The intermountain region is well

pense is involved in the raising of every acre of beets that everything should be made favorable to high yield. The farmer cannot afford to put all of this expense on land that will yield only a low tonnage. Better put the poorer land into grain or some other crop where the loss will not be so great in case of a partial failure.

Even good land must be thoroughly cared for in order to make beet-raising successful. The plowing should be thorough and deep liberal use should be made of manure, and no pains spared to secure a good seed bed.

Probably the single operation which is most often neglected, and where neglect results in the greatest loss, is the thinning. It is impossible to get a high tonnage unless the thinning is properly done. It is very easy to reduce the yield one or two tons to the acre by careless thinning. This year the loss due to this decrease in some cases would mean from \$7 to \$14 per acre.

Thin early and carefully, and you will be rewarded.

Attention to numerous details is necessary in the raising of sugar beets, but the farmer who is willing to give his attention to these details and learn the business thoroughly is on the high road to a steady and permanent prosperity—not the get-rich-quick kind, but the kind that gradually makes him independent.



A beet field in Salt Lake County from which the owner made a good profit last year.

the needed supplies which winter calls for. If he had to wait for the indirect returns from some other crops his credit would have to be considerably extended and he could not buy to the best advantage.

Second, the sugar-beet gives an excellent tilled crop to go into the rotation to help in getting rid of weeds and to put the land in shape for other crops. The deep tillage re-

adapted to the raising of sugar beets; the tonnage is particularly high in this region. Now that the price paid for beets is especially high it is believed that farmers will do well to raise just as many beets as their facilities will enable them to care for.

In doing this, however, it must be remembered that nothing but good land should be used. So much ex-

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When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

ANNUAL SUMMARY OF WEATHER BUREAU FOR UTAH

Alfred H. Thiessen.

There was an excess of moisture and a deficiency in temperature for the year 1916. The average temperature for the State was below normal, the year being colder than the year 1915, which was about normal in regard to temperature. The lowest temperature was—37 degrees at Scofield on December 28th. The highest temperature for the year was 108 degrees at Kanab on May 8th. The chart of mean temperatures on page 106 presents the same characteristics as the previous years. The warmest part of the State was in Washington County, and in the southeastern part of the State along the Colorado River. The coldest portion of the State was, of course, at the higher elevations of the Wasatch and Uinta mountains.

The precipitation averaged for the State as a whole more than any other year since 1909. The precipitation chart on page 115 shows a distribution not unlike those of other years. The wettest portions of the State were in eastern San Juan and western Kane counties, and at places on the western slope of the Wasatch Mountains in the north-central part of the State.

The annual mean temperature for the State was 46.4 degrees, or 1.5 degrees below normal. The highest previous State mean was 49.9 degrees in 1910, and the lowest was 46.5 degrees in 1894. January was the coldest month with a mean of 22.9 degrees, and July was the warmest with a mean of 70.4 degrees. The mean temperatures of February, March and April were above normal, while those remaining were below. The month of greatest plus departure was March, and that of greatest minus departure was November.

The precipitation for the State averaged 15.93 inches, which was 2.21 inches above normal. The wettest month of the year was January with 3.12 inches which was 1.78 inches above normal; but the month with the greatest plus departure was October whose mean 2.90 inches was 1.84 inches above normal. The driest month was June with an average of only 0.22 inch.

There was, of course, an abundance of water for irrigating purposes, and the ranges were generally in good condition, but owing to severe frosts and cold weather in April and May crops were set back considerably. Generally considered the crops were light. September frosts damaged some crops seriously, and freezing weather in November caused the loss of many tons of beets which were frozen in the ground by the exceptionally cold weather in November.

IDEAL ANIMAL DESCRIBED

E. M. Ammons.

What does the market demand today in the beef animal?

The steer that weighs from 1100 to 1150 lbs. at 20 months of age, that has had a steady growth since birth, will make the most money for its owner. Wise stockmen are no longer trying to raise the 1800 or 2000 pound animal. There is no money in it. The animal should not be fed past that period when it makes the maximum growth on the minimum feed. This is at about 20 months of age. If the animal has been growing steadily without checks in the growth, he will weigh about 1150 pounds. He will dress about 95% if he has been properly fed.

A Very Good Tractor for You



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FIRST—Avery Tractors have a special sliding frame which makes possible the elimination of the intermediate gear, shaft and boxings. An Avery Tractor has the least gears, the least shafting and the least bearings of any two-speed, double-drive tractor built—which means more power and a longer life.

SECOND—Avery Tractors have two rear drive wheels and two speeds—a big advantage over single-drive and one speed tractors.

THIRD—Avery Tractors have slow-speed heavy duty opposed motors—not high-speed, light automobile motors.

FOURTH—Avery crankshafts are one-half the diameter of the cylinder or more. There has never been a broken Avery crankshaft.

FIFTH—Avery motors have renewable inner cylinder walls. These wearing parts can be replaced without buying an entirely new cylinder.

SIXTH—Avery Tractors are entirely free from all pumps and fans. All such easily broken and troublesome parts are done away with in the construction of an Avery Tractor.

All these features will be gladly explained to you when you call at our office and warehouse, or write us for the large Tractor Farm Book.

You get a successful tractor when you get an AVERY. Let us talk to you about the large number of Intermountain Ranchmen who are successfully using Avery Tractors here. You will want one.

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VOLUME XIII.

LEHI, UTAH, SATURDAY, FEBRUARY 10, 1917

No. 28

The Agricultural Duty of Water

JOHN C. WHEELON.

"Duty of Water" is a phase that has been used by Engineers and others during the past thirty years to express the relationship existing between a given quantity of water and the area of land that is made to serve. The duty of water is said to be high or low, depending upon whether or not a given quantity of water serves a large or a comparatively small area. Little or nothing was known as to the amount of water required for irrigation purposes at the time of the first settlements in the valleys of the Rocky Mountain region. Water and land were both plentiful, and in order to be sure of a sufficient amount, many of the early settlers filed upon unreasonably large amounts of water. Some gained a title to enough water to cover their land from 6 to 10 feet in depth during each irrigation season. As the population increased and more water was filed upon, some of the streams became over appropriated. There was still plenty of land, but the water was limited, and its value rose rapidly because of the increased demand for it. There has always been considerable difference of opinion, however, as to how much water is actually required for the different soils, as between the heavy clay and the sandy soils. The courts have adjudicated the entire water supply of whole streams only to find that in the course of time a readjudication could and should be made in view of the increase from year to year in the duty of water.

Canal companies have constructed large projects and have provided in the contracts with their patrons that a certain quantity of water per acre shall be delivered from the canal system perpetually each season only to find that in a few years the duty of water has decreased by skillful operation and other, and natural causes to such an extent that the terms of the contract in this respect are often mutually abandoned.

We are just at this time beginning to learn that there is a positive and reliable source of testimony upon this subject in the natural law which governs the transpiration of moisture through the stems and leaves of plants, or in other words, the travel of water from the soil through the roots, stems and leaves of plants in the process of its evaporation therefrom into the air, and, moreover, this natural law is so absolute that it applies to nearly all classes of soil, and so nearly the same in all conditions of climate that it can be relied upon for all practical purposes. For instance, we have learned that the duty of water for a 50 bushel wheat crop is about 15 acre inches of water to the acre of crop. That is to say, a crop of wheat that yields 50 bushels per acre, can pass through its roots, stems and

leaves into the air, during its entire growing and maturing season, 1,500 tons of water, per acre or an amount of water that will cover each acre of ground 15 inches deep; (an acre inch of water is an acre of water one inch deep and weighs a little more than 100 tons.)

A 70 bushel crop of barley can use 15 acre inches.

an acre inch of water means in depth and weight, as well as its relation to the production of crops, let us see just what the above expressions mean in acre inches. A duty of 60 acres to the second foot flow mean that during the ordinary irrigation season of six months, each acre shall be supplied with 60 acre inches or about four times as much as the maximum

ation has averaged but 12 inches per year for 25 years. Assuming that one-half of this moisture evaporated direct from the soil surface during the non-growing season, we can understand that there were only 12 acre inches available for this crop of 40 bushels per acre. Is it any wonder that the studious irrigator is astounded at this want on waste of so valuable an element.

There are two portions of our community that are deeply interested in this subject; the man who has more land than water; because he can use more water to advantage; the man who is using more water than his crops can use to advantage, (for the reason that he has convinced the court or jury that he is entitled to it); because these excess waters are doing his land much more harm than good. Why more harm than good? Because of the fact that water is the most potent and important element in all of nature's great laboratory, its great function is its ability to gather, to hold and to convey all kinds of soluble materials good, bad and indifferent. Put water into the top of a barrel of wood ashes and catch the water from the bottom of the barrel, analyze the water and pour it into the barrel again, and when you catch and analyze the water the second time, you find it carries more lye in solution than it did the first trip; it lost nothing, but gathered, held and conveyed more solids than before. Catch the waste waters from an irrigated farm in a catchment ditch, analyze them and drain them upon another equally fertile farm for use in irrigation; gather these waters again and analyze them and you will find that they have gathered more soil ingredients than they contained when leaving the other farm. We need not worry about the water the crops utilize, but we must watch the excess waters that leave our farm as we can be sure that they are carrying away plant foods that we cannot afford to spare.

From the time the rain drop in its purity falls upon the mountain top and enters the soil it begins its functions and never ceases to gather, hold and convey until it reaches the river, the lake or the sea.

Let us follow some of these waters as they are diverted to a farm for irrigation upon an acre of alfalfa upon which four tons of cured hay are to be grown. The thrifty farmer has built up his soil in the five principle plant foods—Humus, Nitrogen, Phosphoric Acid, Potash and Lime in a well balanced plant ration. He has also provided his acre with a water right at a duty rate of 100 acres to the second foot flow or 42 acres inches per season or 4,200 tons of

(Continued on page 14)



JOHN C. WHEELON, M. S., AGR. ENGINEER.

This article was submitted in the competition for the \$100.00 Silver Cup offered by General Otis, owner of the Los Angeles Times, to the author of the best article of 2,500 words on practical irrigation, read before the Inter-National Irrigation Congress at El Paso, October 15th to 18th, 1916.

Three Judges, an editor, an irrigation farmer and a merchant were selected by the executive board of the Congress to pass upon the articles and select the winner. A number of articles were submitted, one each from California, New Mexico and Idaho were given special mention.

This article, says Mr. Wheelon, was carefully condensed from papers he has written and lectures he has given on the subject during the past few years.

A 100 bushel crop of oats can use 15 acre inches.

A 100 bushel crop of corn can use 17 acre inches.

A 300 bushel crop of potatoes can use 8 1/4 acre inches.

A 4 ton crop of alfalfa can use 16 acre inches.

And yet I have heard farmers testify in court in the honest effort to protect their own interests that their success depended on a water duty of from 60 to 80 acres to the second foot flow.

Now that we have learned just what

yield of crops can utilize.

A duty of 80 acres to the second foot flow means 52 acre inches.

A duty of 100 acres to the second foot flow means 42 acre inches.

A duty of 150 acres to the second foot flow means 29 acre inches, or practically twice as much as the maximum yield of crops can utilize.

We are not deceiving ourselves here; because we are seeing 40 bushels of wheat per acre taken from many of our mountain valleys every two years when the total precipi-

DAIRYING

DISEASES CAUSED BY INFECTED MILK

Reuben Hansen.

Infected milk contains the organisms of one or more of the infectious diseases. The disease most commonly conveyed through milk are: tuberculosis, typhoid fever, scarlet fever, diphtheria, septic sore throat, Malta fever, foot-and-mouth disease, milk sickness and other minor diseases.

Usually milk becomes infected from the persons handling the milk, either on the farm, at the dairy, in transportation or in the household. Often milk becomes infected as a result of disease of the cow.

Tuberculosis.

Its Prevalence.—Of all the diseases found in milk tuberculosis is the most prevalent and is divided into two classes, bovine and human. It is estimated that seven per cent of all the tuberculosis in man is of bovine origin.

How It Gets Into Milk.—There are four ways by which this organism gets into milk:

1. Directly; from a cow with tuberculosis udder, which occurs in from one to two per cent of all tuberculosis cows, the organism flows out with the milk.

2. Indirectly from a cow having tuberculosis of the lungs, the organism is coughed up, swallowed by the cow and passes in the faeces.

3. May be contaminated by mixing with other milk. The milk from a diseased udder of one cow may contain sufficient to infect the milk of twenty-five or thirty cows.

4. Occasionally human tuberculosis organisms get into the milk by sneezing and coughing of the person handling the milk.

Control of Bovine Tuberculosis.—The most practical and most effective method of control is the Bang system, which is as follows: After the herd is tested with tuberculosis, it is divided into two parts (1) the healthy section and (2) the diseased section. These herds are if possible removed to another farm. If this cannot be done they are kept in separate buildings as far apart from the original premises as possible. If neither of these are available, they are kept in separate parts of the same building, a tight partition separating them. The milk of the infected herd is pasteurized before being used.

The calves from the cows in the diseased herd are removed from their mothers immediately after birth and are reared on milk of healthy cows or on heated milk. The disease among these calves are very rare.

Typhoid Fever.

Prevalence.—The disease which is most frequently present in epidemics caused through infected milk is that of typhoid fever. Milk is almost the only medium, with the exception of water, through which this disease is conveyed. This organism grows and multiplies without producing any change in its color, odor, taste, or appearance. The annual death rate from typhoid per 100,000 population in the United States for the period 1901-1905 was 46.5 which is very high in comparison with other countries.

Source of Infection in Milk.—The sources of infection can be grouped under three heads:

1. Direct human infection; from those handling the milk, such as the milker, dairy employees, corner grocery, in the home and in transportation.

2. Indirect human infection; from infected water, which might be used in washing the utensils, and cows infecting their udders by standing in sewage water.

3. Infection of bovine origin; infection through the faeces and urine of the cow when she has been drinking infected water.

Control.—To keep milk free from typhoid fever organisms it is of highest importance that the persons who handle the milk be healthy. A pure water supply is necessary for washing utensils and drinking water for cows. All utensils should be sterilized, and milk pasteurized before used.

Scarlet Fever.

Prevalence.—Scarlet fever is very frequently conveyed by milk and is nearly always contaminated from human sources.

Sources of infection:

1. From persons having had scarlet fever, in which the disease has not been sufficiently isolated, coming in direct contact with the milk.

2. From persons having a mild form of the disease, coming in direct contact with the milk.

3. Through the infection of milk utensils, bottles, etc.

4. From infected cows.

BUILD A LOUDEN BARN

Book of Barn Plans FREE

If you are going to Build a New Barn, or Remodel the Old One, you should have this book.

Why Not Build This Fall?

Louden Barn Plans is not a catalog of barn equipment. It is a complete and valuable book of reference and instruction on barn construction.

The 122 pages of Louden Barn Plans are full of dollar-saving information. It contains 51 representative designs for cow barns, horse barns, combination and general purpose barns, as well as many other designs for hog barns, pens, hay sheds, etc.

The advantages in each design in Louden Barn Plans are pointed out, and estimate of construction cost is given. In addition, there are 53 pages devoted to general construction problems, such as concrete work, laying floors, roof construction, ventilation, etc.

When Writing for This Book, Please State When You Expect to Build, and How Many Cows and How Many Horses You Want to House

We have Designs for nearly 4,000 barns and our architects will give your letter personal attention if we learn your exact requirements.

Louden Barn Equipment

Louden equipment makes possible a clean, sanitary barn with a minimum of expense for upkeep. When cows are transferred from dark, dirty barns to Louden barns, the milk flow often increases from 15 to 25 per cent, and the labor of caring for the herd is reduced one-third to one-half.

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SALT LAKE CITY

We are rounding out
58 years
of service to this
community.

May we serve you?

**Walker Brothers
Bankers**

Founded 1859.
Oldest Intermountain Bank.
SALT LAKE CITY.



Diphtheria.

Prevalence.—The diphtheria organism like typhoid fever and other diseases multiply very rapidly in milk, this fact was not known until very recently. The epidemic outbreaks from the disease through milk are fewer than those of typhoid and scarlet fever.

Sources of Contamination.—Milk is usually contaminated by the secretions of the nose and throat of persons handling the milk and may be infected from wounds on the cow's teats which contain the organism.

Septic Sore Throat.—The disease known as "septic sore throat" is sometimes conveyed by milk. This was not known until 1911. The number of sore throat outbreaks due to infected milk are more than is generally suspected.

The source of infection is often due to persons suffering from the disease coming in contact with the milk and from cows suffering from sore teats.

Foot-and-Mouth Disease.—The foot-and-mouth disease is contracted by man through the drinking of raw milk and the eating of milk products from diseased animals.

Milk Sickness.—Milk sickness is a peculiar disease, also known as trembles, is caused by drinking milk and eating the flesh of animals suffering from the disease.

Big Money in Running Water

Let us start you in a business that will make you from \$15 to \$50 a day when farm work is slack. Other men have done it for years with an

One Man **Improved Powers Combined Well Boring and Drilling Machine**

One Team Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed. Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for wells to water stock and for irrigation. Write for free illustrated circulars showing different styles. **Lisle Manufacturing Co.** Box 976 Clarinda, Iowa

Malta Fever.—The disease known as Malta fever is usually conveyed through goat's milk.

Conclusion.—Any of the foregoing diseases may be kept from entering the milk if careful attention is paid to cleanliness, health of the cow, health of the individual, handling the milk, clean utensils, and pasteurization. Pasteurization is the heating of milk to 60 degrees C. for twenty minutes, which is above the death point of most of the pathogenic organisms.

G. W. Shoener, the well known undertaker, will this evening give banquet to the doctors of the town.—The Scottsville (Ga) Weekly.

KNOW THE INDIVIDUAL COW.

By W. H. Underwood.

Knowing the individual cows in the herd is one of the greatest essentials in the program of the successful dairyman. There is hardly a problem in the dairy business whose solution does not rest in some measure upon the individuality of the herd. If one is to improve his herd by better breeding he must discover his best cows. He does not want to go on from year to year simply guessing. He cannot afford to take a great deal of pains not to mate the very good cow. He cannot hope for great results from the daughter of a poor cow even if the sire is a good one.

If a man has no really good cows in his herd he ought to know it as soon as possible. Perhaps he may have one or two cows of great value but has never tested them, and so their splendid performance has been concealed by the small results from the rest of the herd. To build up the herd the first thing to do is to make a study of the cows as individuals. Having discovered the comparative worth of the cows the best ones can be bred to the sire that will produce the desired results, and knowing their origin naturally better care will be taken of the calves than if nothing was known of the worth of their dams.

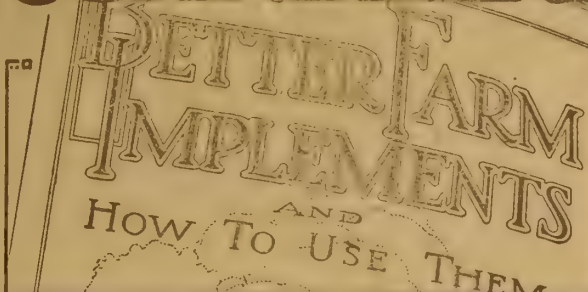
On my farm I have just now some heifers that have a right to be worth considerably more than ordinary cows some day. I know this and so I am watching them all the time. There are many heifers in my community that are born well enough to make them objects of interest to their owners. These heifers receive the best of care because of their good breeding. I am interested in some of them, myself, I am interested because I know the cows and the sire from which they descended. But if it is important for the breeder to know the cow as an individual, it is no less essential to know her in order to feed her properly.

The longer I feed cows the more I realize the necessity of more knowledge of them as individuals. There are some cows that can hardly be fed too much. They are of the class that keep right on milking more and more until the limit is reached and do not carry more flesh than they should, no matter how much food they receive. But those cows that wallow their food and give neither milk nor flesh in return are not to be trusted to eat until they are ready to stop. They must have some one to think for them. If the owner knows his business he can often make much cows pay.

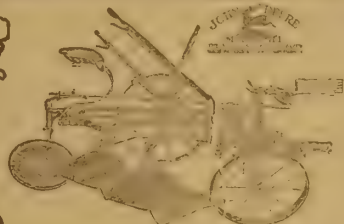
A friend told me how he managed one of these otherwise unprofitable cows. The cow lacked nearly \$2 of paying for her feed in one month. During the next month he reduced certain kinds of food and increased the amount of others and she made a profit of over \$1.25. If he had known nothing about this cow as an individual she might have lived on, losing money for her owner for years.

Sometimes a great producer is injured by scanty feeding. A man of my acquaintance once purchased a very fine grade heifer from a neighbor. She was a descendant from one of the best families of cows I have ever known. In fact, I have not yet seen a poor animal in that family. They were practically pure-bred Jerseys. He paid \$80 for that heifer

JOHN DEERE IMPLEMENTS



New Deere Light Draft Gang Plow



The New Deere Gang is the most widely used plow of its type.

It is light draft, durable and is equipped with John Deere bottoms, known all over the world for superior work, easy scouring and light pulling qualities. It cuts and turns full width of furrow.

A simple, practical foot lift and auxiliary hand lift lever—easy to raise bottoms out of the ground.

John Deere Quick Detachable Shares—great labor and time savers. Share can be taken off easily, only one nut to remove.

For twenty years the New Deere Gang has had the good opinion of enough farmers to make it the one best seller—

And, today, it is the same plow it was twenty years ago, with the usual minor refinements added.

Correct in design, always representing the highest development of the plow-maker's art, the New Deere Gang is a leader, and has been every single year for twenty years.

Go to your John Deere dealer's and look this plow over—you will readily see why it is such a popular plow.



BOOK FREE 156 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars.

Describes and illustrates Plows for Tractors; Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain

Wagons; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders; Stacks; Rakes; Mowers and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills; Seeders; Grain and Corn Binders.

This book will be sent free to everyone stating what implements he is interested in and asking for Package No. X-100.

JOHN DEERE, MOLINE, ILL.

John Deere Spreader

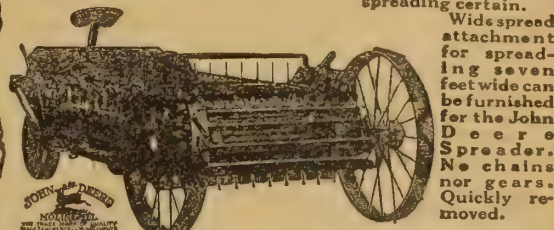
The Spreader with the Beater on the Axle

Mounting the beater on the axle simplified the construction, eliminated troublesome parts and made possible a successful low-down spreader with big drive wheels. There are no shafts to get out of line, no chains to cause trouble, and no clutches to adjust. The only spreader with beater and beater drive mounted on axle.

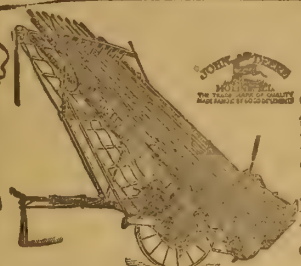


Low down, with big drive wheels out of the way. Easy to load. Revolving rake, driven by manure moving toward the beater—no bunching of manure. Ball bearing eccentric apron—drive—a new and exclusive driving device. Makes uniform spreading certain.

Wide spread attachment for spreading seven feet wide can be furnished for the John Deere Spreader. No chains nor gears. Quickly removed.



John Deere Hay Loaders



John Deere Hay Loaders are made in the factory where the "Great-Dain" line of hay tools originated.

The three styles of hay loaders made in this factory (the leading loaders on the market today) are:

The New Deere Loader with the flexible floated gathering cylinder.

John Deere-Dain System Windrow Loader—a single cylinder loader.

John Deere-Dain Loader, rake bar loader.

Investigate these loaders.



The New Deere is the hay loader with the flexible floated gathering cylinder. Successfully handles lightest swath to heaviest windrow without injuring quality of hay.

Gathers no trash. Puts all the hay in the wagon.

The Dain Loader is the rake bar hay loader which pushes hay so far forward on wagon that only one man—the driver—is needed.

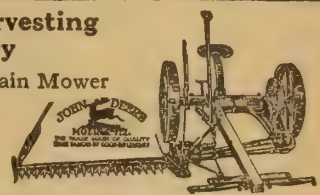
Strokes overlap, practically raking the ground twice.

John Deere Harvesting Machinery

The John Deere -Dain Mower cuts satisfactorily even after years of use.

It has only three gears, so arranged that they hold each other in mesh, even after they start to wear. No power is lost in transmission from axle to knife, the mower runs smoothly and cuts steadily.

The John Deere Sulky Rake has a lever of absolute control. The teeth can be set for transportation and to gather only clean hay, leaving trash and manure undisturbed.



John Deere-Dain Mower

Cuts clean—cutter bar always can be kept in alignment and knives centered in the guards.

21-point clutch—instant cutting—not necessary to back up to start.

John Deere Sulky Rake

Frame with strong truss rod does not sag in center—axles arched, give wheels correct pitch to keep them running true. Rake head turns on axle. Wheels remain in proper position when rake is dumping. Wear is reduced.



JOHN DEERE, MOLINE, ILLINOIS

when she was three years old—a pretty good price for a grade at that time. She was giving 35 pounds of milk per day which tested 5 per cent. I saw him three months later and asked how the neifer came out.

"I was cheated in that cow," he said. "She was all right when I got her, but she is not worth a cent more than any one of my other cows, now that I have tried her out." "How much did you feed her?" I asked.

"I fed her as I did the rest," was his answer.

Of course I told him that the fault was his own. No cow, good nor poor, can make "something out of nothing." The good cow must be fed more than the average cow because we expect more from her.

The man of whom I have written did not furnish this valuable heifer enough food to enable her to work the machinery for milk production

up to the limit and so after borrowing from her body for a time she refused longer to honor the checks which he drew upon her, that is, she reduced her milk flow to a point where she could still sustain her body. The lesson to be learned from an experience like this is, do not feed the poor cow too much and be very sure not to feed the good cow too little. To feed the cows properly we must know them as individuals.



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former as well as their present address, otherwise the
address cannot be changed. This is a matter of im-
portance to you and to us.

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debts of honest bankrupts. Notice of complaint
must be sent us within thirty days from date of the
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Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent
upon application.

Why not name the farm and start with the new
year and advertise your products.

It has been definitely decided to increase the
fees for grazing live-stock upon the National
Forests of the intermountain district a flat
twenty-five per cent for 1917.

The people down in Saint George have the right
kind of a community spirit. They will improve
some of their streets by voluntary donation. The
work is being done under the direction of the
mayor of the city.

One of the impossibilities in farming is that
of being too cleanly about the dairy. This is
just as true if you have one cow or twenty. If
the milk is for your own family or for the mar-
ket. First, last and all the time keep the milk
away from any dirt.

PUT AWAY SOME ICE

A sufficient amount of ice to supply the
average family for summer use can be put away
without a great deal of expense. Local conditions
in our mountain cities and towns are such that
a supply of ice can usually be obtained. Care
should be taken, however, that the water frozen
to ice is free from pollution.

The ice may be packed away with mill shav-
ings, sawdust, chaff or straw. Pack it solid with
no air spaces. Good drainage under and around
the ice house is necessary.

The value and pleasure of having a supply of

ice in the summer time does not need any argu-
ment. Now is the time to put it away for next
summer use. The government has a bulletin
telling how to build an ice house if you want to
send for it.

HOW MUCH DID YOU MAKE LAST YEAR?

Unless you kept a record you do not know how
much you made last year. You might make a
good guess but there are so many things one
might over look that would make a difference in
the final adjusting of the year's business that we
question even if a good guess can be made.

One might say I had so much money at end
of year but that does not mean so much profit.
You might have more money now but how much
less hay or grain have you than a year ago. You
may have no money, yet have a big increase in
amount of grain or machinery or other things you
have bought and paid for during the year.

If you do not care whether you are making
money or not, there is no need of keeping any
kind of a record. If you really want to know
that you are making a profit in the farming busi-
ness, take an inventory and keep a record of what
you buy and sell during the year.

KILL A FLY IN WINTER.

If you will kill all the flies you see about the
place in winter, you are preventing the birth of
millions during the summer. With the first warm
days, comes the flies who have "wintered" in
some crack or hiding place. Swat them and al-
low none of them to live.

There may be from six to fifteen generations of
flies in a summer, and assuming that one fly lays
100 eggs, which is putting it low, at the end of
eight generations there would be produced, count-
ing on an equal division of the sexes, 1,875,000,
000,000 flies.

A good rule to follow in the fight against flies
is "a fly in time saves nine"—nine billions, to be
conservative.

THE TORREN SYSTEM WILL HELP.

The endorsement given the Torren system of
readjusting land titles by the Federal Farm Loan
Board, and their friendliness toward this method
should influence our legislators to pass the Bill
favoring this system that is now before that body
of law makers. The Federal Board have gone
so far as to say "they are anxious to see the
Torren system installed in all states."

Some say it will cost a lot of money to make
the change, suppose it does cost a given amount,
it will not be near so much as we are now charged
by the lawyers and abstractors. Once establish-
ed it makes possible the quick safe changing of
land ownership.

The cost of selling a piece of property often
runs into a great many dollars. Why not adopt
the Torren system in our state now and help
those who will live after us and the people today
by cutting out the cost of these lawyers and
abstractors."

THE BANKER AND THE BOY.

For a year or more there has been a movement
to interest the Banker in a closer association with
the agricultural interests of the State. In one
county they have made a start. We will watch
with interest the work they are doing.

To show what the bankers are doing in one of
our nearby states with the boys, we quote from
an exchange.

"One banker of whom we know is loaning money
without security to all the boys in his commu-

ity who want to enter the pig and calf club con-
tests. Last spring, he advanced money with
which to buy pigs to 342 different boys. He re-
ports that with one exception every boy has paid
back the money promptly, and in the one case,
failure was due to no fault on the part of the boy.
The banker has become so much interested in the
movement that he now employs a young man to
act as agricultural agent and help the boys in
every way possible.

This is a fine thing for the banker and a fine
thing for the boys. From a selfish point of view,
this is an exceedingly shrewd business move on
the part of the banker. He is securing a hold on
these boys that will surely tie them to his bank
when they get into business for themselves. He
has been their friend, and they have learned to
trust him.

The benefit to the boys is two-fold. In the
first place, it gives them an intelligent and active
interest in farming. In the second place, it is
teaching them business principles which will be
of help to them throughout their lives, because
this banker will naturally expect each boy to keep
a careful record of his expenditures, so that he
will know just how much profit he has made. He
will also expect the boy to pay back the loan
promptly whenever the money comes in."

CLEANING SEED VS. PULLING WEEDS.

Nothing can be much more detrimental to the
growth of our crops than weeds. Pulling and de-
stroying weeds forms one of our big summer tasks.
Why not try to prevent a large portion of these
weeds from growing by destroying the seeds be-
fore planting our crops? In other words, why
plant weed seed at all when they are such a de-
triment to the best results of farming and creat
so much extra work?

When we seed a field, we usually want to grow
only one kind of plant. We do not want to grow
oats in wheat fields, barley in oat fields, rye in
corn fields nor weeds in any of our fields. This
should be especially true of fields from which we
expect to get our seed for next year.

The easiest and most effective way to destroy
the weeds is to destroy the seeds before they get
into the ground. We then not only prevent the
growth of these weeds, but we also prevent the
production of a great many more seeds. Accord-
ing to a government bulletin, a single plant some-
times will produce enormous numbers of weed
seeds. Many of these show such great
viability that they live thirty years or more in the
soil. Hence the great necessity of keeping them
out of the soil.

Every farmer should study the subject of
weeds. He should learn what the seeds of the
different varieties look like, so that he can the
more easily keep them out." In view of the fact
that agricultural seed is perhaps the most import-
ant means whereby weeds are introduced upon a
farm, it is particularly important that this seed
be thoroughly cleaned before planting.

Now is the time, farmers, to get busy with this
work. Don't wait until the whether breaks and
the time comes for spring plowing. Start those
fanning mills going now. Get YOUR seed cleaned
today so that your neighbor can use the fanning
mill tomorrow. In this way you all will be able
to get your seed cleaned. It is easier to clean
seeds than to pull weeds.

Remember this that the better and cleaner the
seed is that you plant, other things being favor-
able, the better and bigger will be your crops
when you harvest.

Spring Preparation of Beet Lands

Suggestions by Mark Austin, General Agriculturist of the Utah-Idaho Sugar Company.

Harrowing Beneficial.

Owing to the severe frosts early in fall, very little fall plowing was done on beet lands in either Utah or Idaho. In view of this I am making a few suggestions relative to spring preparation, which I am confident will prove beneficial if properly followed. During the last four or five years beet growers have demonstrated that more tonnage can be grown on heavy lands by the following surface preparation than by spring plowing. Because where heavy land is spring plowed the soil is quite cold and somewhat soggy, and it is very difficult to make a fine surface or seed bed; and before the soil gets sufficiently warm the sprout the seed it has dried out. Then, if a heavy storm comes shortly after the seed is planted and before it has sprouted, on heavy soils spring plowed, it will be likely to form a crust over the top so that it cannot get through, thus injuring the stand very materially. While with surface preparation this is not likely to occur.

Therefore, I would like to suggest that where farmers have heavy soil which they expect to plant to beets

they use the following method:

First, take a fine tooth harrow, riding it and running it as deep as possible; following with a float thus forming a fine mulch on top and preventing the land from crusting. Then take a spring tooth harrow six foot in width providing the farmer has one. Putting four horses on it, running it the same way as the rows will run as deep as possible, at least three or four inches.

If the farmer has not a spring tooth harrow it would pay him to get one or two or three smaller farmers might group together and purchase one.

Next, follow immediately behind the spring tooth harrow with a fine tooth harrow so as to keep the land worked down to retain the moisture, and not allowing any clods to form.

This surface preparation of the soil is recommended only to land that was planted to beets or potatoes last year.

The soil should then be worked in the same method crosswise, running the spring tooth harrow an inch or two deeper if possible. Then go over it again with a roller or land leveler to get the surface firm enough for planting.

Just before planting the land should be harrowed with a fine tooth harrow crosswise, or in the opposite direction to which the beets are to be planted.

If the land has been used to feed sheep on, and there is any straw on the surface it should be removed first, leaving only the manure. If the soil has been manured with long manure it will be necessary to spring plow it, to obtain good results. Where the soil has been top dressed with fine manure, the surface preparation as above outlined will be preferable on heavy or reasonably heavy soils. Of course, light, sandy soil may be successfully spring plowed and prepared for beets.

It has been thoroughly demonstrated that heavy soils, thoroughly surface prepared, have yielded two to three tons more to the acre than with either fall or spring plowing. We have tested this method thoroughly for four or five years, plowing one-half of a field in the fall and preparing the other half in the spring as outlined above, and know whereof we speak. Now that beets are worth \$7.00 per ton, farmers will readily see the advantage of surface preparation of heavy soils. There is also quite a saving in labor, it makes it possible for the farmer to prepare his soil more quickly, and he is much more certain of a good stand of beets.

Where a farmer does not have a spring tooth harrow, and does not feel like joining with his neighbors in getting one, splendid results have been obtained with a good steel frame reasonably fine tooth harrow, well sharpened, putting plenty of weight on it, harrowing with it first lengthwise and then crosswise and going over it at least 6 or 8 times until the soil is thoroughly cut to a reasonable depth with a fine mulch on top. This is far better than spring plowing on heavy land.

I desire to present the foregoing to the beet growers for their careful consideration. They will, of course, have

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Salt Lake City, Utah

to use their own judgment in the matter, as I do not desire to influence them to follow a course that does not appeal to them, because a man is not likely to make a success of anything to which he is not fully converted. I know that this method will work successfully if properly done and in the right season.

I want to emphasize again the necessity of this surface work being done early—just as soon as the soil can be worked and before a crust has had time to form on the surface of the ground. This is important for two reasons, first, when done early the crust will not form and the tools used will run deeper, and second, the moisture will be retained near the surface, which is very, very important. Many of our farmers do not fully realize the importance of retaining the moisture in the soil, so that if we have unusually dry weather they will still be reasonably certain of a good stand of beets.

Where the farmers prefer to plow

their lands, they should be thoroughly harrowed and gone over with a land float first, forming a fine mulch on top. This also should be done just as soon as the farmer can get on the soil successfully without injuring it. Then he will find the soil will plow much better, and instead of turning under a lot of dry surface soil he will turn under fine and moist soil, which he will find to be most beneficial.

A great many of our farmers are not as careful as they should be in the preparation of their seed bed and a great deal of labor and tonnage is lost by reason thereof. Therefore I want to impress upon our beet growers the necessity of early and thorough preparation of the soil for the seed, which is the foundation of the crop.

A church notice which appeared recently in a Knightstown paper was worded as follows: Subject: "Hell, and Who in Knightstown Are Going There."—A hearty welcome to all.

SEED TIME

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Utah Cereal Food Co.
Ogden, Utah

LIVE STOCK

FEEDING WILL BE NEW UTAH INDUSTRY

By John T. Caine III, Director Extension Division Agricultural College, Logan, Utah.

Utah, prior to this time, has been bending most of her efforts towards producing feeders. These animals have been produced here in thousands and sent from the state to other districts to either be fattened and sold or disposed of as they leave the ranges at lower prices. During 1916 a movement started to feed more of our live-stock at home and furnish the local market with them.

The new Cudahy packing plant and the enlargement of the Ogden plant makes it possible to market large quantities of finished beef, mutton and pork at home. Utah and Idaho farmers started at last the move to patronize these institutions.

Prices to Stay High.

As far as we can figure out, prices will remain high for all kinds of meat animals for the next two years, as there is a scarcity in this country. There is only half as much beef per capita in the United States as there was in 1907. This seems to point toward good prices for all kinds of meat animals for the next couple of years at least.

We have found from practical experiments in the feeding line that alfalfa hay is the king of all forage crops, and Utah produces the best alfalfa in the world. The tonnage per acre runs high. Barley also is as good a fattener as corn, and when barley and alfalfa are used together they form a well balanced ration. Barley is grown with the best of results in the intermountain states.

At the last international live-stock show at Chicago the grand champion steer and the reserve champion steer were from California and had been fed for the display on barley, oats and bran, three animal foods in which Utah excels. The feeding of beet pulp will also enter largely into the fattening problem, in the vicinity of factories, and the rate with which they are going up in Utah forces the prediction that it will not be long until no district in Utah will be far removed from access to a sugar factory.

Beet feeding produces very rapid results. When alfalfa hay is fed in combination with beet pulp, feeding can be done as cheaply as on anything else, except where cattle are run on the open range. Where beet pulp cannot be secured in Utah, silage is being used. Many silos have been built, and more will be put in during the early months of 1917.

Other Mixture.

During the year 1916 much stock was put on feed by farmers in Utah and many are preparing to take up the feeding angle of farming during the coming year. Last week, after the farmers' conference which the agricultural college held at Salina, five ranchers decided to embark in the business of feeding stock for market.

Lamb feeding is becoming an important industry in Sevier and Sanpete counties. During 1916, 50,000 lambs were fed in the two counties, and that number will be greatly increased in 1917, as it has been found to be a very profitable business.

In the hog feeding work of the Salt Lake and Ogden stock yards, their

plan of providing pigs for boys to care for and sell will greatly increase the number of hogs fed in the state. It will also greatly increase the production of pork in Utah during the next year.

It is the opinion of the best informed men in live-stock circles that prices this spring will be very high and those having stock on feed should get them ready for the spring market.

BETTER BREEDING ANIMALS

The almost unprecedented demand for meat products of all kinds naturally has led to a great demand for breeding animals. Farmers show a willingness to pay long prices for animals for breeding purposes that in normal times would go to the block. Such conditions are likely to result in the sale of many second and third class purebreds, at prices far above the actual worth as breeding stock. At no time should registry alone be accepted as the basis on which to judge the value of breeding animals. It is more profitable to invest the money required to buy a third or fourth rate purebred in a first-class grade if the chance is offered.

Individual excellence is the first requirement of any breeding animal; it is better to sacrifice blood lines and pedigree rather than individual type and conformation, quality and general breeding merit. Both the buyer and the seller make a mistake in a transaction that aims to put an inferior purebred animal in a breeding herd. The buyer makes an error because the use of the "scrub" purebred often lowers the quality, type and market value of the resulting offspring, especially in the good grade herd or flock. This means an actual financial loss, aside from the added initial cost of the animal.

The seller makes the grievous error of selling an animal from his herd for breeding purposes that is bound to prove unsatisfactory and react on his future business. The position of the man who is willing to make such a sale is that of a dealer rather than a breeder; his sole object is to get as much quick money out of his herd as he can, whether or not the live-stock industry and the bred in which he is interested are benefited; his is destructive, not constructive breeding.

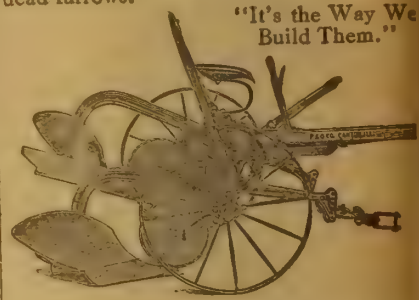
Buyer and seller owe it to themselves and to the live-stock industry as a whole to avoid the purchase and sale of cheap, second rate purebreds for breeding purposes.—The Ohio Farmer.



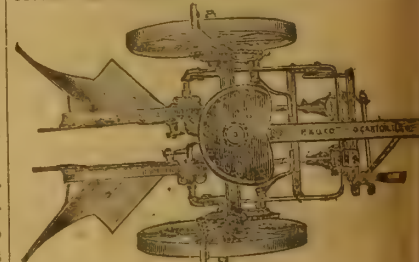
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POULTRY

THE MODERN BROODER John Wilson.

As the results of much experimenting during the last few years the modern brooder is now quite successful.

One should however exercise some judgment when selecting a brooder. Our aim should be not to see how cheaply we can purchase a machine, but how to get one that will perform the work in a proper manner. With a good brooder and proper attention given to details, chick rearing is a comparatively easy task. On the other hand, and inferior machine and negligent care will only tend to make one sorry he ever entered the chicken business. In selecting a brooder our desire should be simplicity. The less complicated the different parts are, the better. The brooder should be so constructed that it can be easily cleaned as cleanliness is absolutely essential to success. There should be no dark or difficult to clean corners. All parts should be easy of access to facilitate cleaning.

One of the mistakes that is usually made when selecting a brooder is in getting one too small for the number of chicks that are to occupy it, too much room can never do any harm but when the chicks are over-crowded, bad results will follow. Over-crowding causes poisoned air and insanitary conditions and opens up a breeding place for disease. It is always preferable to have several brooders, dividing the flock of chicks into small numbers. It is preferable to have not more than 25 in one brooder. Anyway, 50 chicks should be the limit. Whatever the number is to occupy the machine, be sure and give them the room necessary for good results. Although, when first hatched, they seem to have more room than is necessary we find that a few weeks' growth makes a vast difference. They will then be sadly handicapped for lack of floor space. It is a safe plan to put in only half the number of chicks of the brooder's rated capacity.

Cleaning, Disinfecting and Managing.
If the brooder has been in use before, a new brood should not be put in until the interior has been thoroughly cleaned and disinfected. Disease germs lurk in the filth and at

any time may destroy the entire brood. A good disinfectant should be sprayed over the entire interior of the machine, getting it into all the cracks and crevices. A little crude carbolic acid added to the whitewash makes it much more effective, however. On warm, clear days the brooder should be opened up so the sunlight can enter and help to purify and sweeten the interior. Before transferring the chicks from the incubator to the brooder one should have everything in readiness. The brooder should be heated up to the proper degree some time before the chicks are to occupy it. We must guard against the possibility of the chicks getting chilled. They must be kept carefully protected from drafts while the change is being made. If the chicks once get chilled we will most likely have some of them cause us trouble. Stunted growth and bowel trouble can often be attributed to chilling. Always cover the floor of the hover chamber with soft absorbent such as loam and chaff. A half inch of each covering the floor serves to keep the chicks comfortable. This same material should also be scattered over the floor of the runway into which the fine chick feed is scattered to induce them to exercise, for it is just as essential that the chicks keep busy as well as the older fowls. In fact, exercise is essential to proper growth and development.

One of the principal factors governing success in raising brooder chicks is the method of applying heat. The heating arrangement that I prefer is the contact method. We all know that the mother hen supplies warmth to the chicks backs and we must endeavor to do likewise. Bottom heat tends to produce leg weakness and we must guard against this. Top or contact heat can easily be supplied by having a light, warm cloth suspended in the brooder so that it rests lightly on the chicks' back. As the pipes that supply the heat enter the brooder near the top and the cloth is underneath the pipes, the heat must first filter through the cloth before reaching the chicks. Therefore, the chicks obtain warmth by having their backs come in contact with the cloth, the method being similar to that of the mother hen.

It is best to keep the chicks confined closely to the source of heat for the first few days as they require considerable brooding at this time. Rest and quiet benefits them more than anything else. It tends to strengthen them and put them in condition to cope with adverse conditions later. Were the chicks allowed to run about soon after being put into the brooder they would most likely wander away from the hover chamber and would get chilled before they could get back. Therefore, watch them carefully at first and the results obtained will be well worth while. While we should avoid the possibility of the chicks getting chilled we also should prevent overheating. We can best judge the right temperature of the brooder by the chicks' actions. If they seem inclined to huddle together, striving to get near the source of heat as possible, the temperature is too low. On the other hand, when they keep entirely outside the brood chamber or are continually panting when inside, they are too warm. When they arrange themselves just inside the hover chamber with their heads peeping out we may be sure they are comfortable. Their occasional happy chirps denote this.

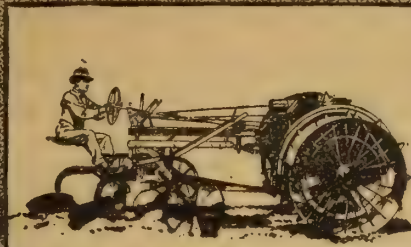


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He—Why didn't you answer my letter?
She—I never received it.

He—You didn't?

She—No; and besides, I didn't like something you said in it.—Boston Transcript.

RELIABLE FARM BARGAINS

If you are living on a good farm and raise what you eat for yourself and family, you need not be afraid of the war.

U. S. Government report shows we are 25 per cent short on wheat crops. Potatoes are higher than they have ever been since the Civil War. Sugar beets \$7.00 per ton. Take your pencil and figure how much money you are making, working for wages, as compared with buying a good farm under the present conditions. We have, at the present time, \$2,000,000 worth of good farm land for sale on small payments down and ten years to pay at 6 per cent interest. We are in a position to furnish you what you are looking for, large or small, in most any part of Utah or Southern Idaho. We are exclusive agents for the Utah-Idaho Sugar Company and also exclusive agents for Kidder-Peabody Company. Together with the service of the Kimball & Richards Corporation, you are sure to get a square deal. You can also feel sure that you will be taken care of in case of any misfortune.

If you are considering a farm this coming spring, come in, write or telephone us and let us explain to you what we have for sale.

160 acres in the center of the Bear River Valley. This land is in sage brush at the present time. 1 1/4 miles from the railroad station. Property all around this land is farmed. Water can be pumped for irrigation at a very small cost, being only five or six feet. Also eligible to irrigation from the Bear River Canal. This property can be had for \$35.00 per acre, ten years to pay at 6 per cent interest.

0 acres one mile from the town of Tremonton which is one of the liveliest little cities in Northern Utah at the present time. On the main county road facing south. Water right from the Bear River Canal. Property in this vicinity is all under a high state of cultivation. The property belongs to a man in California who has instructed us to sell at \$135.00 per acre.

0 acres in Salt Lake County near the sugar factory, highly improved, with modern home and one of the best barns in the County. This property is under a high state of cultivation and is one of the most successful farms in the vicinity. The owner of this property met with a serious accident and is unable to work this ranch and for that reason, it is for sale. This property can be had at a very reasonable price and on good terms. He will also consider taking some Salt Lake City property in exchange for this farm.

We have in Southern Idaho, right on the railroad, near a first class town, farms at great bargains. We have a number of forty acre tracts and several eighty acre tracts and a few 160 acre tracts, all under cultivation with nice little homes. This property raised last year first class crops of alfalfa, potatoes and grain. We are offering this property at the ridiculously low price of from \$60 to \$90 per acre with ten years to pay. These are farms that will immediately pay for themselves. If you are interested in Southern Idaho property, you can't afford to miss this opportunity.

We exchange homes for farms and farms for homes in Salt Lake.

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Colors, 5c pkg. 1/2 oz. 50c, 1 oz. 75c, pound
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FOSTER'S FLOWER SEED FARM
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Send for a seed catalogue and select your seeds now.

Management Demonstrator and sent the County Agents.

Free Farm Account Books.
All Farm Co-operators in the farm management project areas are to receive free farm account books and all available literature of particular interest on the subject of farm management.

Farmers in all parts of the state who are desirous of co-operating with the U. A. C. in the keeping of farm accounts shall receive a farm account book free, by agreeing to furnish the Farm Management Demonstrator their farm business record at the end of the year, in order that he may aid them in summarizing and analyzing their business. The books are to be returned to the farmers. All farmers are to make written application to the Farm Management Demonstrator for an account book, and all books are to be sent from the office of the demonstrator.

IRRIGATORS' QUERIES ANSWERED
O. W. Israelson, U. A. C.

Should I allow my soil to become very dry before I irrigate?
There are two chief reasons why you should not allow the soil to become very dry before applying water, which are briefly:
(1) If your soil is heavy, it is frequently very difficult to get the water to penetrate it when it becomes very dry. Very dry soils do not absorb water as readily as slightly moist ones.
(2) During the growing season plants should not be permitted to suffer in the least because of lack of water. It is, of course, true that application of large quantities of water at very frequent intervals is also detrimental.

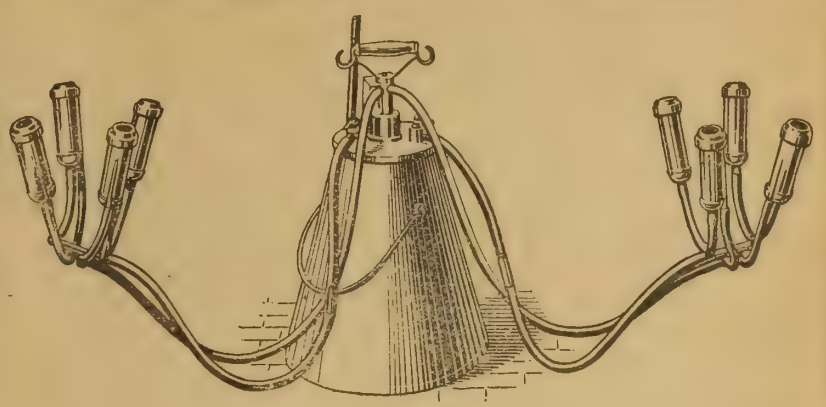
Irrigators frequently find by experience that boring into the soil occasionally with a view of ascertaining the amount of moisture in the lower depths pays excellent returns. For this purpose every Utah irrigator can well afford to own an ordinary post hole type auger, having a diameter of two inches. If your local hardware dealers do not have these augers they can be purchased directly from the makers, either Hall Manufacturing Company, Monticello, Iowa, or Iwan Brothers Company, South Bend, Indiana.

If a sample of soil taken a foot below the surface will not, in part, hold its form after being pressed in the hand, it is very likely that irrigation is necessary.

A good rule to follow in the attempt to maintain the best water supply has now become a slogan among California irrigators, and is this: "Avoid a feast and avoid a famine."

HANDLING EVERGREENS FOR TRANSPLANTING
When expecting a shipment of trees, call up the freight or express office at least once each day. Do not let the trees lie around the depot longer than it is absolutely necessary. Get them home as soon as possible taking care to protect them from the sun and wind. If you cannot plant them the day they are received, store them in a cellar or some cool, moist place, until you are ready to set them out. Under favorable conditions they will keep for several days without injury in the bales and boxes in which they are shipped. The bales should be opened enough to let the tops of the evergreens have plenty of air to prevent heating or molding. Never wet the tops of evergreens, but if

WHAT SATISFIED CUSTOMERS SAY OF THE EMPIRE MECHANICAL MILKER



Double Unit. Capacity 20 to 30 Cows per Hour. One Man Can Operate One or Two Double Units, Do the Stripping and Carry the Milk.

CLOVER LEAF CHEESE FACTORY
Gustave Kunze, Proprietor.
FULL CREAM CHEESE.

Buhl, Idaho, October 21, 1916.

Empire Cream Separator Co.,
Denver, Colorado.

Gentlemen:—
I have been using your Milking Machine for over three months, and up to the present time it has given perfect satisfaction and as I have been very conservative in installing a machine, having watched one of my neighbors using your machine, and seeing it gave him perfect satisfaction and worked successfully, I decided in favor of your Empire Machine. I am milking 105 cows at present and if I should have to go back to hand milking I would certainly reduce my herd. Further will say, that in the last six months there has been eight of your Empire Machines installed in this neighborhood and are all giving satisfaction. From my personal experiences I can heartily recommend the Empire.

Your truly,
(Signed) Gustave Knuze.

We have the agency for the following well known lines:—McCormick Mowers, Binders, Headers, Oliver Chilled Plows, Empire Cream Separators and Milkers and others as well as a full line of Dairy supplies. We carry a full stock of repairs for all machinery which we sell. Write us for prices and catalogues.

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is to give you the best that can be made in the line of woolen goods.

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there is any danger of the rots becoming dry, they should be moistened but not soaked. When moistening the roots, do not open the bundles so as to expose the roots, but pour a cupful or two of water over the stems at the top of the bale, allowing it to trickle down into the packing.

When ready to plant prepare a bucket of puddle before opening the bundle of trees. Puddle is prepared by mixing water and sticky clay to the consistency of cream. Open the bale or box of trees in the cellar, taking out only as many as can be placed in the puddle at one time. Clear their roots of the packing material and immerse them in the puddle. Carry them to the planting site in the puddle and take the trees out one at a time as you are ready to set them. This method of handling the ever-

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green eliminates all danger of exposing the roots. Water should not be used as a substitute for puddle; it washes the roots to free of soil that is a protection to them.—W. J. Morrill, Colorado, A. C.

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COMPANY

HOME

TESTED RECIPES

Lemon Honey.

One pound granulated sugar, one-fourth pound butter, six eggs, four lemons. Put the sugar into a saucepan, add the yolks of the six eggs and the whites of four, the juice of four lemons and the grated rind of two, and the butter. Stir well over a slow fire until the mixture is as thick as honey. Pour into glass jars and cover tightly. Pour into a cool place. Use as a sandwich or cake filling.

Fruit Cheese Salad.

Six dates, three figs, one-half cup blanched almonds, chopped, one scant cup of cream cheese, one teaspoonful lemon juice, pinch of salt.

Mix the ingredients to a paste and make into balls. Serve four to each person on a nest of lettuce leaves, with a mayonnaise to which an equal quantity of whipped cream has been added.

Graham Date Gems.

One-half cup brown sugar, one-half cup butter, two eggs, one cup sour milk with one teaspoonful soda, one and one-half cup graham flour, one and one-half pound dates, chopped nutmeg to flavor.

Orange Marmalade.

One orange, one lemon, one grapefruit, water, sugar. Shave the fruit very thin, rejecting only the seeds and cores. Measure fruit and add to it three times the quantity of water. Let stand in an earthenware dish overnight, and next morning boil for ten minutes only. Let stand another night and then add an equal quantity of sugar to the fruit and boil steadily until it jells. Watch carefully that it does not burn.

Winter Marmalade.

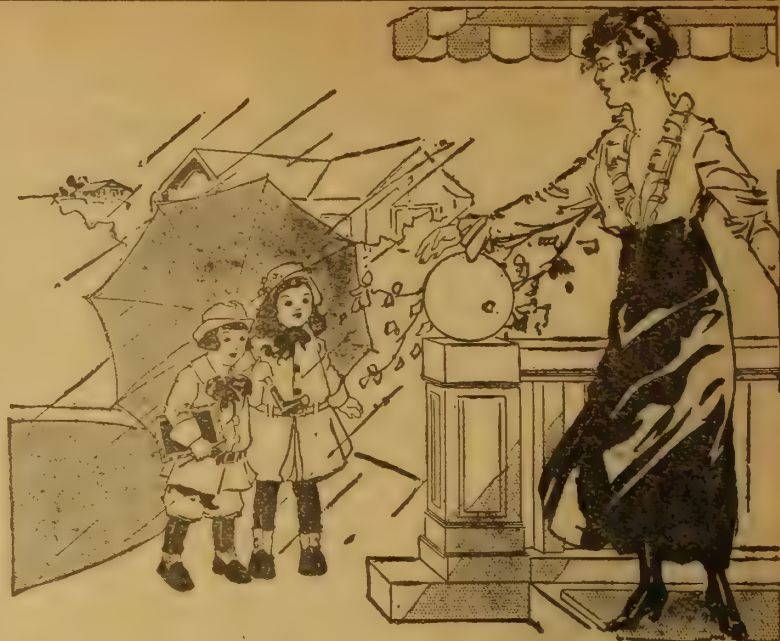
One pound dried apricots, one quart apple sauce, scant quart sugar, juice of one orange. Wash apricots thoroughly, cover with hot water and soak overnight. Make a quart of smooth apple sauce. Rub the softened apricots through a sieve to remove fibres, and stir the pulp, the sauce, sugar and orange juice thoroughly together. Cook very slowly, with asbestos mat under the kettle to prevent scorching. About forty-five minutes will be required. Put in jelly glasses, and when cold, cover with paraffin.

Pineapple Baravoise.

Line a mould holding one and one-fourth quarts with slices of Hawaiian pineapple split in halves. Soften one-fourth package of gelatine in a little cold water and dissolve by setting the dish in hot water. To the gelatine add a cupful of canned Hawaiian grated pineapple, the juice of a lemon and one good one-half cupful of sugar. Stir over ice water, until the mixture begins to thicken, then fold in one and one-half cupfuls of double cream, beaten solid. When the mixture will hold its shape, turn into the lined mould, ready to serve, turn out and garnish with one-half cupful of cream.

Potato and Celery Hash.

Mix two cups of diced cold potatoes, one-half cup diced celery, a sprinkling of grated cheese if desired, one-half teaspoon of salt and one tablespoon of butter. Bake in the oven until nicely browned, stir and brown again.



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Sweet Muffins.

Have the smallest muffin tins oiled and hot. Half fill with following batter: One-third cup butter, one-fourth

cup sugar, pinch salt, one egg, three-fourths cup sweet milk, two cups flour, two teaspoons baking powder. Bake 400 degree oven.

Timely Suggestions for Seed Legislation

It would be well for our legislators to take note of the following suggestions made by George Stewart, Assistant Agronomist of the Utah Agricultural College.

There is considerable agitation to get seed laws passed in Utah. We undoubtedly need some regulations to control the importation, the exportation, and the intra-state sale of seed. Annually we suffer much loss on account of discrimination against Utah seed. Here is a quotation from one of our seed-houses on this subject:



12-25

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"There is but one way to have pure seeds, and that is to have the farmer who grows the seed go through the fields before the crop is harvested, and cut every thing that is foreign. It does not take a great while, and is of the utmost importance.

"Last fall we tried to buy some Turkey red wheat, and out of more than thirty samples, not one of them was pure, and we were obliged to turn down a large order from an adjoining state.

"Again our alfalfa seed is always offered at a lower price, because there is always sweet clover and mustard seed mixed with it. Both of these seeds could be quickly disposed of by "roguing" the fields before the seed is cut. Of course the seedsman, who handles the seeds, is always blamed for what he is not to blame for at all, the carelessness of the grower."

In spite of this condition it would probably be unwise to pass laws without investigating the seed situation. We should be almost sure to repeat some or all of the mistakes that were made by other states and that were due to uninformed, hasty legislation. It seems that the creation of a State Seed Laboratory for testing seed both for purity and for germination would do much to lessen present discrimination made against our seed by states that have inspection. Likewise we might prevent the importation of seed that menaces—say for example potatoes bearing a new disease that has not yet troubled us. With such a laboratory working we could then afford to take sufficient time to investigate the situation and to pass adequate and applicable laws for regulation of the seed business. Below is a quotation from another Utah seedman's letter in answer to an inquiry:

"Each year the purchasers of all kinds of farm seed become more exacting with respect to purity and germination and in most cases will not consider any seed without the knowledge of its purity. Specially equipped laboratories are necessary for accurately testing seeds for purity and germination. To meet this demand, the United States Department of Agriculture co-operated with the Oregon Agricultural College and the California Agricultural College in establishing and maintaining a properly equipped Seed Laboratory. In view of the increasing importance of Utah and the contributing territory as seed-producing centers, we think steps should be taken to secure the co-operation of the Department with the Utah Agricultural College in establishing a Laboratory for testing the purity and germination of seed."

In the meantime a commission might be appointed by the State Legislature to investigate the seed problem and report in, say two years, with recommendation on helpful legislation. A wisely chosen commission would most probably be able to analyze the condition and start our legislation down the right channels, thus avoiding sacrifice of both time and money. Blind plunging is expensive. Such a commission would constitute the eyes of the State Legislature with which it is to look before it leaps into law to control a nearly unknown condition.



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When writing to advertisers please mention the Utah Farmer.

THE AGRICULTURAL DUTY OF WATER.

(Continued from page 3)

water per acre. As soon as the water is applied to the land, the real duty of water in agriculture begins. It dissolves the plant foods; it supplies the moisture necessary to the fullest development of the soil organisms or bacteria; it assists the bacteria in the nitrification of these plant foods; and, after all the ingredients are reduced to the finest state called nitrates, (which is the only condition suitable for plant use), the water holds it in solution and travels throughout the soil area and feeds all plants with this nectar of life. Right here another function in the duty of water begins in making its journey to the atmosphere. It starts at the terminals of each and every branch of the elaborate root systems of all the plants and begins the distribution of all the various substances that make up the structure of the plant and permits itself, entirely freed of its precious load of plant food, to pass into the air in the enormous quantity of 400 pounds to each one pound of dried grain or cured hay and straw. In this manner 1,600 tons of 16 acre inches of water have done their duty and have performed every function that nature has required of them to the utmost economy. But what of all the rest of the water we brought to this acre; we started with 4,200 tons of 42 acre inches per acre, it all fulfilled its office while in the soil and became laden with nitrates; the crops were able to give transportation to the air of 1,600 tons of this water only. There are yet 2,600 tons in this acre that must be disposed of or it will fill the soil so

full of water that no plants can grow. It tries to get away by passing down through the sub-soil to some spring or stream. If that is not sufficient outlet, the farmer spends his money and time in building a waste ditch to carry it away; always, of course, carrying in solution its valuable load of carefully prepared plant foods, and if this does not suffice, the land is perforated with tile drains to offer still further means of escape.

Some 85 experiments and laboratory analyses have convinced the writer that the waters passing from farm lands robs them of valuable plant foods. Eighteen experiments have shown that water from the tile drains carries, in many cases, as much as 30 pounds of Humus, 1 2-10 pounds of Nitrogen, 6 pounds of Phosphoric Acid and 20 pounds of Potash per acre inch of water discharged. When we consider the values represented here we can see that no farm can afford to lose any of these vital elements.

Careful measurement and analyses upon the writer's own tile drained farm in Box Elder County, Utah, shows that during two years some 16 acre inches of waste water passed out of this soil, or about 5 acre inches per year, and conveyed in the discharged waters during these two years 300 pounds of Humus, 20 pounds of Nitrogen, 40 pounds of Phosphoric Acid and 180 pounds of Potash from each acre of ground.

When we realize that all our arid lands are in their natural state deficient in Humus and Nitrogen, and that we are plowing under alfalfa and applying barn yard manures to build up these very elements and that a 70 bushel oat crop takes from the soil 67 pounds of Nitrogen, any school

boy can tell me that I cannot afford this leak in my business.

I believe it is safe to assume that there are 50,000 acre feet of water that pass over or through the lands under the Bear River Canal System in Box Elder County, Utah, that are denied the full duty of passing through the crops to the air, and are forced to join the surplus waters again every year, and that are laden with Nitrogen enough to produce three-quarters of a million bushels of oats, or one-half a million bushels of wheat, or 110,000 tons of sugar beets. Can we wonder that a noted soil chemist has asserted that a century of careless irrigation will exhaust out the best land on the continent.

Right here, the irrigation farmer should learn the first and most important lesson in the practice of irrigation: To supplement the natural precipitation with enough applied water to mature a maximum crop and no more. His land is rich in plant foods and every acre inch of water wasted from his farm carries away these elements in solution.

In conclusion it may be said that these losses may be avoided by serving to the land only as much water as the crops can utilize, and while the rain belt farmer drains his land and must submit to the excessive rain falls that leach out his soil, the arid farm irrigator has the moisture conditions absolutely under his control and there is no good reason why his land should not be more fertile and productive in a century than when first reclaimed.

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The above company was incorporated December 29th, 1916, with a capital stock of \$800,000.00. The officers are J. A. Hendrickson of Logan, President; J. William Knight of Provo, Vice President. These, with the following, constitute the Board of Directors: Fred J. Kiesel, Ogden; William H. King, Salt Lake; John C. Sharp, Salt Lake; John H. Anderson, Logan; Robert A. Moyes, Ogden; Lon J. Haddock, Salt Lake, Secretary.

Due to the fact that so many Utah people have been promised the privilege of taking stock in this company the directors have authorized that a small block of stock be set aside for this purpose.

This advertisement is placed simply as a fulfillment of the promise that those who wish stock may now have the privilege, so far as it will reach, provided it is taken at once.

All stock is one and the same kind. There is no promotion stock given. Everyone will share and share alike. The factory has enough beet acreage signed up for five years to keep running at a profit for that length of time. It is an independent company, having no connection with any of the combined companies of the state.

The stock is \$100 per share, to be paid as follows: 25 per cent with order, 25 per cent March 15th, at which time large payments for machinery will be due. The remaining 50 per cent will be called for during the season prior to September 1, 1917, the date contracted for the completion of the factory.

THOSE DESIRING STOCK MAY SEND IN THEIR ORDERS, WITH CHECK FOR FIRST PAYMENT, BY MAIL OR BY CALLING ON THE SECRETARY, LON J. HADDOCK, at the office of the company, 1605 Walker Bank Building, Salt Lake. The stock will be reserved without preference in order in which the applications (accompanied by first payment) are received.

Remember, This is the Only and Final Notice to All Who Have Been Promised Stock.

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WASATCH 6661

LON J. HADDOCK, Secretary.

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Mrs. J. T. Miller read an article
on "Personal Devils." Seventeen were
present.—From the Boone (Iowa)
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"For the sake of peace I often keep
still even then I know I am right."
"Same here. I'm married, too."—
Detroit Free Press.

OPENED JAN. 1ST, 1913



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And every mile is an easy mile. The big, over-size tires, 32 x 4, the long, semi-elliptic springs, 51 inches in rear, 112 inches wheelbase, all make the **Sensible Six** one of the most comfortable and easy riding cars of its size ever built.

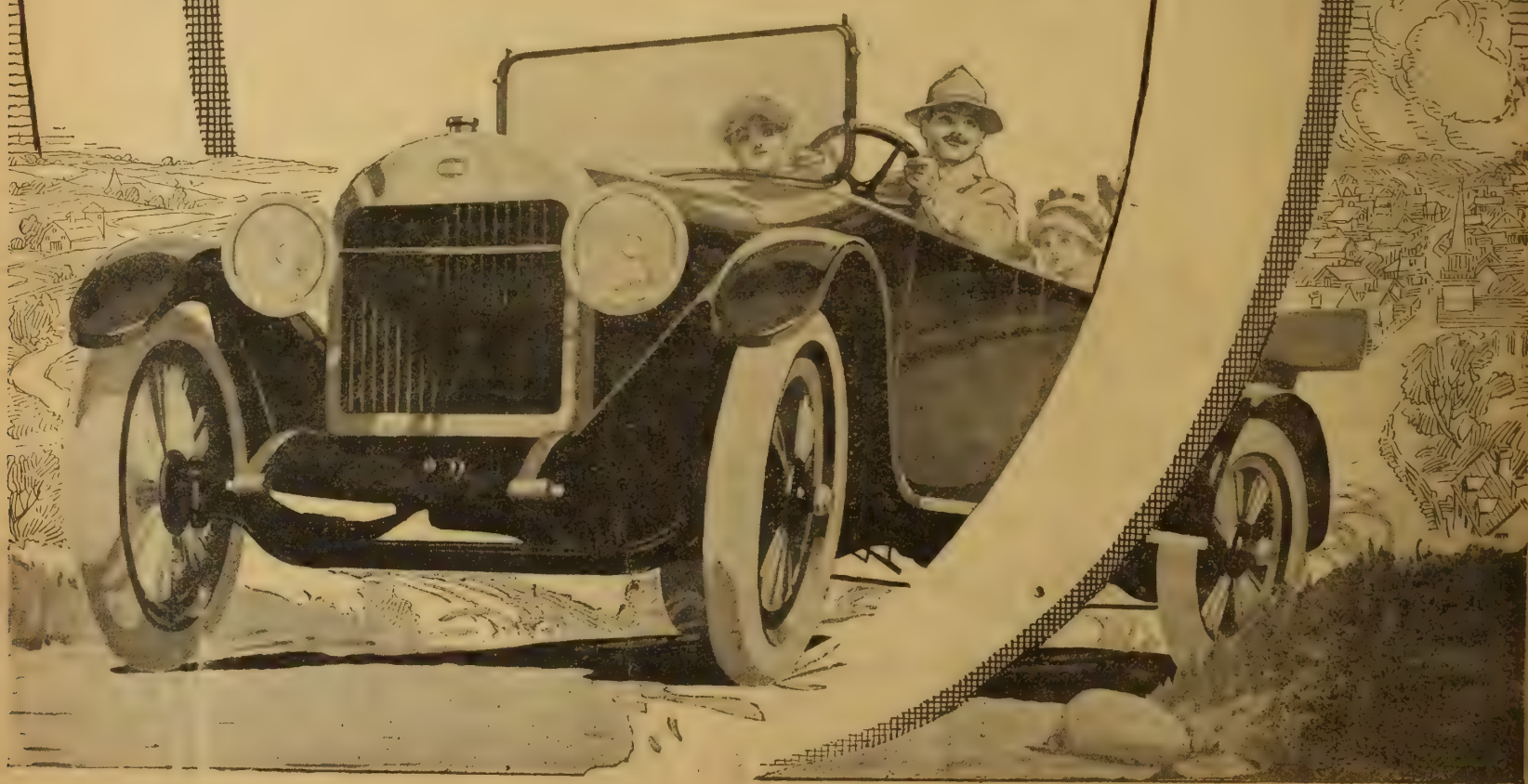
It has the power, comfort, good looks, reliability you want in an automobile—it is sensibly priced—\$875, and built to operate at moderate cost.

Oakland Eight—\$1585—is a big luxurious 73 h. p., 7-passenger touring car for those who demand the utmost in power, speed and luxury.

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(51)

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as the
Oak”



THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 29

LEHI AND SALT LAKE CITY, UTAH

FEBRUARY 17, 1917

Many Successful Agricultural Meetings

WITH THE LIVE-STOCK GROWERS.

Produce What the Market Demands.

Stockmen should grow only that which the market demands, stated Mr. Ammons. The steer in greatest demand today is not the animal weighing from 1800 to 2000 pounds, an animal in which the profit has been eaten up in feed consumed. The well bred steer, weighing from 1100 to 1200 pounds, that has been brought to an early maturity is the beef animal in which the stockman will find the greatest profits. The development of such an animal should take the following course. Starting with a well bred spring calf, with the right care he should weigh 450 pounds by fall. During the weaning period the calf should not be taken from milk and put on dry food suddenly. Such a course will check the growth and cause a deterioration in quality that no amount of good care afterward can fully make up. Give the calf root crops, along with third crop alfalfa hay, or clover, during the weaning period.

During the first winter the calf should grow constantly. If he has been well fed during the winter, the spring grass will cause a wonderful increase in growth in the animal. If not, it will take a full month on new feed to get the animal started right. When the steer is taken off the grass during his second fall and put on the range be careful that the winter feeding is not put off until too late. Never let the growth of the animal be checked. Start feeding early enough to keep a constant and rapid development. Then by January you will have a steer of fine quality, weighing about 1200 pounds, that it has taken but twenty months to produce. He will dress above 65 per cent and will sell at a premium price of from fifty cents to one dollar a hundred, or above.

Frequently the remark has been made, said Mr. Ammons, that the West has two drawbacks in stock-growing, the cold winters, and the lack of corn for feeding. The truth is that these are both assets. The severity in climate is a good thing, because it gives a superior flavor and food value to the hay products, and because it causes the beef animal to put on just the right amount of good, flaky fat, fat that cannot be so well secured by excess feeding. Corn is not necessary in the growing of steers. Too much corn tends to the production of yellow on the animal. Grasses, small grains, and root crops will produce a quality of beef superior to anything

A number of very successful meetings have been held at the different Farmers' Round-Ups and Housekeepers' Conferences, under the direction of the Agricultural College. Prominent speakers and experts have held meetings in many sections of the State. The gathering at Logan is looked upon with much interest and for this reason we are going to give a brief review of it as reported by D. E. Robinson of the Agricultural College.

corn fed. In Utah, exactly the right conditions for the production of the highest quality steers exist, but the cattle must be given proper care during the winter. The animals must be kept warm, by all means. If warmth is not supplied by way of adequate

when the present production has been doubled.

Grazing Problems Important to the Utah Stockman.

The importance of grazing problems to the Utah stockman was emphasized by Mr. Anderson, of the



shelters the animal is going to use part of its feed to produce heat.

The wise farmer will produce something that will leave his farm better than he found it. Live-stock will do this. Instead of selling your crops, turn them into beef; and your profits will increase and the fertility of your land will be maintained.

There is no danger of overproduction in the live-stock industry. The West, today, is producing but fifty percent of what it might produce, and farmers may feel assured that the present prices will be maintained

United States Forest Service. With in Utah, wholly or in part, lie eleven national forests, comprising some 7,500,000 acres. Upon these lands there are interests dependent of an estimated value of \$38,000,000. An exceptionally large number of grazing permits are issued to the stockmen of Utah, about one-fourth of the total number issued in the United States, in fact. The situation here is very complicated, due to the many permits issued and the different interests represented. The stockmen should cooperate in live-stock associations and work harmoniously with the federal

government in improving range conditions. Already about sixty live-stock associations are recognized in Utah. These have done much to improve range conditions, and secure better range regulations. In Idaho such associations have gone farther and entered the field of co-operative herding and marketing, with marked success.

The grazing capacity of the national forests can be increased only by a better distribution and utilization of the forests. The government has done much by way of establishing salt stations, fencing, building stock bridges, and constructing roads. Salt stations are generally placed at some distance from streams and other watering places. The movement of the cattle between the watering place and the salt ground insures a more equal grazing. Fences have also been used to force an equal distribution of animals. Stock bridges have opened up grazing districts untouched before. In road construction, the Government expects to spend \$70,000 in Utah next year. Heretofore, not more than \$19,000 has been spent in the Utah forests in any one year.

The loss of cattle due to poisonous plants is a serious problem confronting the stockman. Last year there was a reported loss of \$132,000 in Utah alone, due to poison larkspur. This loss occurred in central Utah, largely. The government has developed four methods of larkspur control. These are: digging, this method is generally most successful and it has been found that the plant can be eradicated in this method is generally most successful and it has been found that the plant can be eradicated in this way at an average cost of but ten dollars an acre; cutting, in this method the plant is cut off beneath the surface of the ground; fencing, and herding.

It has been discovered, that 90 percent of all animals that have eaten poisonous larkspur fall with their heads downhill. If they are found early enough and turned around so that their heads lie uphill, thus decreasing the pressure of the blood on the heart, many will recover.

Artificial re-vegetation of national forests has proved a failure. Natural re-vegetation by restricted grazing is now advocated.

Live-stock Men assured of a Good Market.

Live-stock growers at the Round-up were gratified when Mr. Joseph Manderfield, Manager of the Salt Lake (Continued on page 4)

SEEDS

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Salt Lake City, Utah.

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When housewives use sugar that is made in the west, such as Table and Preserving Sugar, they are securing a product that is not only 100 per cent pure but which also contains 98 per cent of energy when consumed as food—a body builder, a strength builder and an energy builder.

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On railroad giving excellent facilities.

Prior water right at \$1.00 per acre if used.

Write us today or see
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604 Dooly Bldg.
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Send for a seed catalogue and select your seeds now.

With The County Agents

REPORT OF COUNTY AGENT WORK IN UTAH

Beaver County.
January, 1917.

Hans A. Christiansen, County Agent.
Farm Management—During the month forty-three farm management survey records were taken. This is the third year that these records have been taken. Forty records of last year's business were also returned.

Potato Project—Three meetings of Farm Bureau Directors have been held to outline the plan of work on the different projects. On this project agreements for the co-operators to sign were prepared and the county agent and committee are getting signatures to this agreement.

Hog Raising Project—The object of this project is to standardize the breed of hogs raised in the county and have a sufficient number ready for the market at about the same time so that carload shipments can be made. Agreements will be drawn up for the farmers to sign, the same as in the potato work.

Boxelder County

Robert H. Stewart, County Agent.

Farm Bureau—Eight meetings have been held during the month for the purpose of organizing Farm Bureaus and very satisfactory results were obtained. The County Farm Bureau Directors assisted in choosing the projects for next year's work, which are as follows: Dry-Farming, Dairying, Standardization of Crops, Pure-bred Sires, Alfalfa Weevil Control, and Sugar Beet Raising.

Miscellaneous—Some assistance has been given to the District Club Leader in placing 92 brood sows with club boys in the county. Five banks in the county advanced the purchase price of these hogs, and each boy is to sign a note for his pig.

Carbon-Emery County.

Wallace Sullivan, County Agent.

Farm Management—Three farm survey records were taken during the month.

Farm Bureau Organization—Eight local Farm Bureaus were organized during this month with a total membership of 450. A great deal of interest is being shown in this work.

Duchesne Uinta County.

M. L. Harris, County Agent.

Farm Bureau—A number of local Farm Bureaus have been reorganized this month and the new officers are planning an active program of work for this season.

Club Work—A number of meetings have been held and accomplishments of last year's work presented to the people.

Iron County

Alma Esplin, County Agent.

Rabbit Extermination—Four "drives" were held during the month under the direction of the Cedar City Farm Bureau. From one to two hundred men were engaged in each drive, killing from four to fifteen hundred each time. Also poisoning stations have been established at a number of places.

Note: The county agent is engaged in teaching at the Branch Agricultural College and this report includes only the work done by the Cedar City Farm Bureau.

Millard County.

J. P. Welch, County Agent.

Farm Management—With the assistance of the County Agent Leader, thirty-nine farm management survey

records were taken in two days at Hinckley. Last year's records were also returned. This is the third year that these records have been taken.

Drainage—On account of the ground being frozen, the work on the Hinckley district had to be discontinued for a time. Petitions are being circulated for the creation of a district at Oasis and Deseret, com-

prising about thirty thousand acres of land.

Farm Bureau—A campaign for increasing the membership has been conducted this month in ten towns with a result that 256 new paid-up members have been added to the enrollment. The County Agent Leader assisted in this work as well as the county officers of the Bureau. Each local Bureau has been reorganized and the necessary committees appointed.

(To be continued next week)

Auction Sale of IRRIGATED FARMS

Under Order of Court of Feb. 5, 1917.

An exceptional opportunity to secure some of the best irrigated farm lands in Utah at a fraction of their actual value.

A Receiver's Auction Sale of the rich Irrigated Lands, hotel and other buildings, Canal system and other property of the MOSIDA FRUIT LANDS CO. will be held at 10 a. m. on Monday, March 19, 1917, on the north steps of the hotel at MOSIDA, UTAH.

The Mosida Fruit Lands Co. was in financial difficulties and a receiver was appointed by the District Court of Salt Lake County, and this sale is ordered by the Court to raise funds to meet its obligations.

Here's your chance to get a good improved and irrigated farm at from \$40 to \$60 per acre. The location is ideal, near the west shore of beautiful Utah Lake. Adjoining lands were sold at \$100, \$150, and \$200 and acre. It will be offered in units of 40 acres, but you can buy any number of acres.

Opportunities like this are rare. Don't miss it. Come and bid.

For full particulars see Legal Notice in Thursday's Deseret Semi-Weekly News or write AT ONCE to

H. C. ALLEN, Receiver

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Salt Lake City.

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LEHI, UTAH, SATURDAY, FEBRUARY 17, 1917

No. 29

My Way of Growing Sugar Beets

Selection of Ground.

The principal factor to be considered is the physical condition of the soil; the way in which it has been previously handled and the climatic condition. Much more depends upon these factors than upon the kind of soil to be used. Physical condition of the soil depends to a considerable extent, upon the previous crops and the way in which the soil has been handled.

The soil should be well supplied with humus, not only to insure its fertility but to improve its water holding capacity. Previous croppings should have been such that the ground is in good condition and reasonably free from pests that are capable of injuring sugar beets. The soil should be well drained, either naturally or artificially in order to prevent water logging.

Extremely sandy soil should not be selected for sugar beet ground, especially in localities where high winds prevail in the spring. The shifting sands are liable to cut off the young plants or to cover and smother them. The adobe and silty soils should be handled with considerable care to prevent baking and crusting, but this is entirely possible and when properly handled, are excellent soils for beet production.

The kind of location of the subsoil are always important factors in selecting soil for sugar beets. In some cases, the subsoil is very porous so that the water passes rapidly through it with a tendency to leave the surface soil deficient in water and to leach out the plant food. This condition can be relieved to some extent by increasing the humus supply in the soil and by giving special attention to forming the seed and root beds in order that their water holding capacity may be increased. If the subsoil is extremely porous and deep so that sufficient water can be retained in the root bed only with difficulty, it would not be advisable to use the soil for beet purposes. The opposite condition, namely, a very hard sub-soil, known as hard-pan, prevails in certain localities. If the hard-pan is close to the surface so that there is not sufficient depth of soil to produce sugar beets, the fields should not be used for this crop; so all conditions that would be favorable for sugar beet culture in one locality, might not be satisfactory in another locality on account of climatic conditions. For example; in some localities, a soil containing considerable sand might give excellent results with beets while a similar soil in a locality where high winds prevail at planting time, might make it very difficult to get a stand. It should

be remembered, however, that many of the apparent difficulties, may be in a large measure overcome by the exercise of proper foresight and care in preparing the soil and in the subsequent care of the beets.

Preparation of Soil.

My experience and observation in the raising of sugar beets has been that people who are careful in rotating their crops, selecting and preparing their ground, are the people who make the greatest success in the beet raising industry. My advice would be to raise alfalfa three years, sugar beets three years, grain two years, and the third crop, re-plant alfalfa. For an example, I take sixty acres of ground, starting all in alfalfa. The first year I plow up twenty acres, plant to beets, raising beets on this ground for three years. At the end of the third year, I plow up the second twenty acres, plant the beets the following year, planting the twenty acres that I previously had into beets to grain (wheat or oats) making twenty acres alfalfa, twenty acres sugar beets, twenty acres grain. I let the second twenty acres remain in sugar beets for three years and at the end of the third year, I plow up tract No. 3. The previous year I have re-planted my first twenty acres into alfalfa and by doing this, I have still twenty acres to sugar beets, twenty acres to grain and the first twenty acres back to alfalfa; so, when I get this re-planted, I start at the first twenty acres and re-plow. By this method of rotating, you will keep the fertility of the soil at a high standard.

In order to raise sugar beets successfully in our valleys, it is necessary to start three years before you plant them.

The time, the depth and the kind of plowing done and the condition of the ground at the time of the plowing are all important factors in preparing the soil for sugar beets, aside from the fact that each crop grown should in a way be a preparation for the crops which are to follow. The best method of plowing alfalfa ground is to take your plow share to the blacksmith shop and have him weld about four inches additional on the heel of your share. By so-doing you will avoid missing any alfalfa roots.

The first plowing should be very shallow; just deep enough to cut the alfalfa below the crown so it can be thrown out on the surface to die. After you have gone over the ground with a harrow, in order to get the roots on top so that the sun will kill them, then plow the ground the second time about eight or ten inches deep. It has been my experience,

(Continued on page 11)

How to Get Rid of Some Farm Pests

For Getting Rid of English Sparrows, Gophers, Ground Squirrels, and Field Mice, the Poison Wheat Method is Undoubtedly the Best.

Poison Wheat Method.

Dissolve $\frac{1}{8}$ oz. strychnine sulphate in $\frac{1}{2}$ pint of boiling water. Pour this while hot over 2 quarts of wheat and stir constantly till all the liquid is absorbed. Dry thoroughly without scorching the grain.

Feed the sparrows sparingly three or four days previous to putting out the poisoned wheat. The poison should be put out in dry places in small quantities—just what will be cleaned up in one day. Follow up next day with good wheat as the birds become suspicious. This should be done in several places on the farm where chickens, pigeons and quail do not frequent. The dead and dying birds should be removed an hour after setting out the bait.

For Gophers, Ground Squirrels and Field Mice, place the poisoned wheat in their runs.

For controlling grasshopper the following information is given.

Destruction of the Eggs.

All places where eggs have been deposited should be thoroughly disced or worked up with a springtooth harrow in the fall. At least three discings should be made, lengthwise, crosswise and cornerwise, and more would be better. This treatment will break up a very large percent of the egg masses and disturb many of the rest so that they will be exposed to drying and frost action during the fall and winter. In the early spring this process should be repeated and most of the rest of the eggs will be turned up and exposed to the drying action of the sun and wind and to attacks of predaceous insects.

Destroying the Young Hoppers.

If the eggs are not destroyed the young hoppers will appear in large numbers on the margins of the fields and on any dry spots. At first they will keep near the open dry places and congregate on them at night to roost. The best method of destroying these is to poison them with a bran mash made as follows: 20 pounds bran, 1 pound paris green or white arsenic, 2 quarts syrup, 3 oranges or lemons, 2½ gallons water.

The bran and poison should be thoroughly mixed together while dry, care being taken not to breathe the poison. Then the water, syrup and the orange or lemon should be mixed together and the dry bran sprinkled with the mixture, not wet, but simply dampened until the poison will adhere to the particles of bran.

This mixture should then be sown broadcast wherever the little hoppers are. This amount should be enough to scatter over several acres. The

best time to sow it is late in the Afternoon or evening after the air is damp, or, better still, very early in the morning before the hoppers are moving. The hoppers will then find it before it has had time to dry out. Their sense of smell seems to be very acute and they will travel several rods to get the "bait."

This method of poisoning can be used on the young hoppers at any time, or even on the adults, but is most successful if used while they are young and before they have been generally distributed in the fields.

Grasshoppers are hard to poison and it will take a day or two before the effects of the poison can be estimated.

The Grasshopper Catcher.

After the young hoppers spread out into the fields or where the adults are distributed over any considerable area, the best and cheapest method of getting rid of them is by the use of the grasshopper catcher. This machine can be run over hay and grain crops, sugar beets and potatoes; in fact, over practically everything except corn and ripening grain.

The principle of the machine is very simple—a box about two feet square and sixteen feet long on runners, a two or four extending out four feet at each end, to which a horse is attached. The horses then travel twenty-four feet apart, driving the grasshoppers in until most of them are in front of the sixteen-foot machine. A rope fastened to the hame on the inside of each horse and dragged just in front of the machine causes the hoppers to jump just as the machine gets to them. The front of the machine is made of tin and is about two and a half feet high and slightly curved. This front does not extend quite down to the bottom and about four inches in front of it and about four inches high there is a false front, a second piece of tin, which curves back down and into the box. A grasshopper hitting the tin face cannot get a foothold and is perfectly helpless and slides down between the two pieces of tin, strikes the curve and is thrown well back into the box, far enough so that he cannot see the opening through which he entered. The top and back of the box are made of wire mosquito netting and the hopper immediately jumps towards the light and clings to the netting, never seeking the hole through which he came in. Several bushels can be gathered in this way before they will shake down onto the bottom sufficiently to choke up the front opening.

(Continued on page 7)

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"Selecting and Developing the Jersey Herd"

Is a booklet by Prof. Hugh G. Van Pelt. It tells how you can build a well-developed, money-making Jersey herd by proper selection and judicious breeding. The future of your dairy herd depends upon how you select your foundation animals and how they and their offspring are developed. The Jersey cow combines beauty with dairy conformation. Healthy, vigorous and profit-producing, she lifts the mortgages and increases bank accounts. Send for book today.

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DAIRYING

REPORT OF WELLSVILLE COW TESTING ASSOCIATION FOR JANUARY 1917

By LeRoy W. Hillam.

At the completion of its Fifth months work, the Wellsville Cow Testing Association again announces a new state record for butter fat production for one month. This month Pres. D. A. Kerr's nine year old Holstein cow "White Bag" takes the place with a production of 1959.2 pounds of milk, testing 4.4%, making a new butter fat record for one month, of 86.2 pounds of fat. This record not only surpasses the state record for a grade cow but also beats any tested pure bred cow in the state by a wide margin. Together with this honor "White Bag" also holds the distinction of giving the most milk in one day of any cow in the Association. This cow received but four pounds of chopped barley for her grain ration, forty pounds of wet beet pulp, as a succulent food, and all the alfalfa hay she would consume for roughage as her daily food.

Second place goes to John Darley's 4-year old Jersey "Viola." She produced 1460 pounds of milk, testing 5.6%, making a butter fat record of 81.8 pounds for the month. This production also breaks the state record for one month and as Viola is only a 4 year old she will no doubt be much better as a producer after she becomes 5 years of age.

Third place for the month goes to D. O. Nielson's 7 year old Holstein "Daisy." Her production was 1897 pounds of milk, testing 3.9%, producing 74.0 pounds of fat for the month. Viola and Daisy were fed on wet pulp and alfalfa hay with no grain of any kind.

LeRoy L. Green had but three cows on test this month but they averaged 55.9 pounds apiece. John Darley's Jersey herd with twelve cows on test averaged 49.89 pounds per cow. Eight of Mr. Darley's cows are on the Honor Roll for the month. John A. Leishman's mixed herd of 9 takes third place with a herd average of 45.6 pounds of fat. Eighteen herds, with a total of 140 cows, averaged over 30 pounds of fat for the month.

The "Honor Roll" contains 68 cows this month, each of them having produced over 40 pounds of butter fat. This is just twice as many cows as were on the Honor Roll for December. Of these 68 cows, 26 produced over 50 pounds, 10 over 60 pounds, 3 over 70 pounds, 2 over 80 pounds, and one over 85 pounds of butter fat for the month. Fifty-five cows produced over 1000 pounds of milk for the month.

The Association average, for the 326 cows on test was 29.11 pounds of fat per cow, practically 5 pounds higher per cow than last month's average. The average of the ten best herds was 38.86 pounds of fat per cow, while that of the ten poorest herds for January is 22.25 pounds per cow, which is the same as the Association average for the month of September. This shows a decided increase in butter fat production throughout the Association and is largely due to the practice of winter dairying, where in the cows are freshened for winter milking and are given the proper food and care during the winter months.

Competition among herds is becoming keener every day and a great amount of interest and good natured rivalry is being stirred up among the

members. This is causing members to take more interest in their cows and follow a more systematic method of feeding and caring for their animals. That the Boarder cow has no place in Wellsville is shown by the fact that seven more cows went to the butcher's block in January.

During the month John Stuart bought three Holstein heifers and a fresh Holstein cow with a male calf, all of which are registered and of excellent breeding. These animals will soon amply repay Mr. Stuart, not only through their own production, but through the increased value of their posterity over that of grade animals.

Every member of the Association is boosting for better cows and more modern dairying. Letter heads bearing the Association motto "Accuracy replaces guesswork" and advertising the Association and its members have recently been gotten out for the use of Association members.

A brief resume of the work done by the Association was given by Mr. Hillam, official tester, in Logan at the U. A. C. Roundup.

MANY SUCCESSFUL AGRICULTURAL MEETINGS (Continued from page 3)

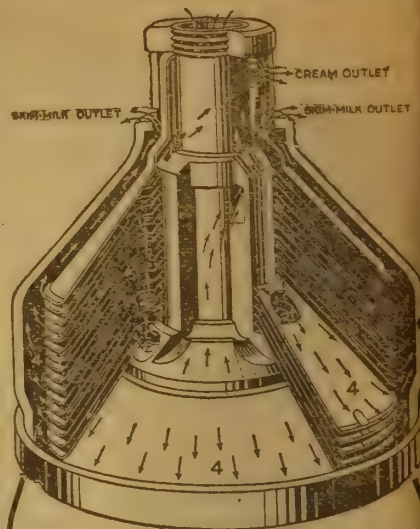
Union Stock Yards, assured them of the certainty of a good market for their product near at home, now that the Union Stock Yards have been established. The stock raisers will now be enabled to sell their animals at the highest market price when they are ready to market them, and will not find it necessary to sell their animals by contract several months before they are ready for the market and run the risk of large losses due to the rise in prices.

WITH THE DAIRYMEN Factors Governing Production of Milk and Butter Fat.

If you have the right kind of cows you don't need to worry about the present high price of feed, said Professor Geo. B. Caine. It is a big mistake to sell your herd simply because the price of feed has gone up.

Two factors govern the production of milk and butter fat. First we must have good cows, Utah farmers are feeding too much feed to inferior animals. About one third of the dairy cows in Utah are not paying for their feed. Cow testing associations are needed to enable the farmers to pick out their non-paying animals. By eliminating the bad cows and feeding all our feed to the good cows we can increase our dairy production by one half. Better bulls are also needed to raise the quality of our dairy cattle. The second factor of importance is the feed. We never starve the good cow. We must never keep the poor one. Alfalfa is the king of all feeds for dairy products. We must not feed it to the exclusion of all other feeds, however. Root crops, with a little grain for heavy producers, must accompany the alfalfa for best results.

Composition of Dairy Rations.
The proper composition of feeds in the dairy ration was discussed by Dr. W. E. Carroll. There are two classes of feeds roughages and concentrates. Under roughages we have the high protein content plants, such as alfalfa and clover, and the low protein content, grass and corn fodder. Under concentrates we have wheat and oats



Here is the heart of The NEW DE LAVAL CREAM SEPARATOR

This is the new self-centering De Laval bowl with detached spindle, that is creating such a sensation in the dairy world.

This new De Laval bowl, with patented tangential tubular milk passages and patented removable milk conveyor, makes possible in a bowl of given size and weight, operated at a given speed, greater skimming efficiency and capacity than has ever before been attained in any other cream separator bowl.

These are big advantages that you can secure only in the New De Laval.

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If you are trying to get along without a cream separator or with a half-worn-out or unreliable machine, why not get a NEW De Laval NOW and stop your cream waste? You don't need to count the cost, because the De Laval will soon pay for itself.

There is a De Laval agent near you who will be glad to explain all the improvements and advantages of the New De Laval, and will set and start a machine for you on your farm and let you try it for yourself.

Why not see the nearest De Laval agent at once. If you do not know him, write to the nearest office for any desired information.

New Catalog will be mailed upon request.

The De Laval Separator Co.

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50,000 BRANCHES AND LOCAL
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Puffs, and all lameness from Spavin,
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Every bottle of Caustic Balsam sold is
warranted to give satisfaction. Price \$1.50
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Price, per doz., 25c; per hundred, \$1.75.
These Capsules are put up in handy
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Indorsed and recommended by the U.
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Minneapolis, Minn. Established 1890.

with much protein, and corn and bar-
ley with little. The highest protein
bearing feeds are found in cotton seed
and linseed meals, blood meal, tank-
age, and meat meal. If cotton seed
meal is fed it must be fed in small
quantities.

In feeding, the ration should be
made up from available products on
the farm. By-products feeds are valu-
able and it is very good economy to
utilize such feeds because, through
the animals, they can be changed in-
to human food.

Beet pulp is a valuable item in the
dairy cow's ration. Dried beet pulp
will replace half of the grain feed in
the ration. At present it is not
economical for farmers to have wet
beet pulp any great distance. How-
ever, if the factory would dry the
pulp it would become more easily
transportable.

In connection with feeding, it has
been found that 75 to 90 per cent of
the food value of feeds can be return-
ed to the soil. This means that the
agriculture of the future must center
around the live-stock industry.

Practical feeding suggestions, as
worked out by the experimental work
carried on by the College were pre-
sented to the farmers in placard form.
They are as follows: Feed all the
roughage a cow will clean up. At
least twenty pounds of the roughage
should be alfalfa hay. Feed about
one pound of grain for every six
pounds of milk produced. Study
each cow's needs and feed accord-
ingly. Barley is the best grain in Utah
to fed with alfalfa. Oats is the next
best. All grain should be ground.
On good pasture, feed no grain ex-
cept to heavy producers. Some root
crop should be grown for winter
feeding.

The Feeding of Silage.

Silage has not been used extens-
ively in Utah, mainly because alfalfa
furnished a cheap and palatable
roughage, said Mr. Ben R. Eldredge.
While alfalfa is the best single feed
known, the time of cheap alfalfa is
past. Present prices and conditions
in Utah make it necessary to supple-
ment alfalfa with some other rough-
age, for economical milk production.
The cheapest feed for this purpose is
silage made from corn, sorghum, or
kafir corn.

Farm animals do best on a ration
containing a variety of feeds and
practical feeders have found that
alfalfa with corn, sorghum, or kafir
corn silage makes an excellent com-
bination for dairy cattle. In com-
pounding a ration, one of the import-
ant factors to be considered is suc-
culence, a quality possessed by feeds
containing the natural plant juices.
Silage, roots and other succulent feeds
have a higher value than indicated
by the nutrients they contain, on ac-
count of the favorable effect of suc-
culence upon the digestive processes
of the animal. The succulence of sil-
age is nearly equal to that of our
summer pasture grasses.

The acids produced during the fer-
mentation of the silage, also seem
to aid in the digestion not only of
the silage, but of other feeds that
are fed with it, giving the rest of the
ration a higher feeding value than it
would have without the use of silage.

Silage is one of the cheapest suc-
culent feeds which can be produced
in Utah. The cost of corn silage in
Salt Lake Valley during 1913 has been
less than \$3.00 per ton; on farms not
so well equipped for production, its
cost in 1912 was slightly more.

Silage when properly stored can be



What You DON'T GET in an Avery Tractor

YOUR success with a tractor depends about as much on what you don't get in its construction as on what you do. Here are some things you don't get when you buy an Avery: You don't get any fuel pump, water pump, fan, sprocket chains, belts, outside lubricator, counter-weights on the crankshaft, third crankshaft bearing, second clutch or intermediate gear or shaft. All these trouble-makers were eliminated when the Avery Tractor was designed.

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You get a powerful, low-speed, long-lived, special approved tractor motor—a crankshaft so strong no owner ever broke one—renewable inner cylinder walls, patented sliding frame, two-speed gear, all spur gear transmission, four wheels, double drive. Avery Tractors are built by a company owning a large factory and many branch houses where com-
plete repair stocks and a service force are maintained. The Avery line includes five regular size tractors—8-15, 12-25, 18-35, 25-50 and 40-80 h.p., and special 5-10 h.p. Plows and Tillage implements in all sizes—and Two-Row Motor Cultivator. Write for a FREE copy of the new 1917 Avery Catalog and name of nearest Avery dealer.

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choicest ingredients are used for this perfect bread.
A flavor you never tire of. Fresh every day at all
good grocers.

Royal Baking Co., Salt Lake City, Utah

When you answer advertisements,
mention the Utah Farmer.

kept over to the next season, while
roots must be fed the first season.
Roots must also be sliced before feed-
ing and this imposes a daily task not
required with silage. The losses dur-
(Continued on page 8)



*** Combined with the ***
Deseret Farmer and Rocky Mountain Farming
Established 1904

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Lehi, Utah.

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LEHI, UTAH.

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Our office at Salt Lake City, Utah,
is in the McIntyre Building.



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former as well as their present address, otherwise the
address cannot be changed. This is a matter of im-
portance to you and to us.

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Association, Utah State Bee Keepers' Association
Bear River Valley Farmers' Protective and Commercial
Association, Agricultural College Extension Depart-
ment and Utah State Fair Association, Utah-Idaho
Millers' and Grain Dealers' Association, Utah Fruit
Growers Association.

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honest responsible advertisers, nor will we pay the
debts of honest bankrupts. Notice of complaint
must be sent us within thirty days from date of the
transaction, and the subscriber must have mentioned
Utah Farmer when writing the advertiser.

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upon application.

Every farmer should have a good vegetable
garden. Right now is the time to prepare for
it. Send for a seed catalogue and select your
seeds. Be ready to plant the early vegetables
as soon as possible.

Do not overlook the advantage of keeping some
poultry on the farm. Many a grocery bill has
been paid with the eggs and what is better than
fresh eggs for breakfast. If you did not raise
any poultry last year, plan now to do so this
year.

There is a yearly loss in Utah of \$132,000 due to
the death of cattle on the range, fully 95 per cent
of this loss is due to poisonous lark spur. Those
who use the range should co-operate with the
government and try to eradicate this dangerous
weed.

HOW ABOUT YOUR FENCE

Right now is the time to look over your fences,
and see if they are in good shape. When the
snow melts away and the first grass comes, live-
stock will test a fence in order to get to the green
feed. They will find the weak spot, and even
if the rest of the fence may be the best, the fence
is only as strong as the weakest place. Spend
some of your spare time now and see that your
fence is in good shape, that your gates swing
all right.

COMMUNITY BREEDING

A community is distinguished by the prevailing
breed it adopts. The adoption of a common type

of pedigree stock is a mark of progression for
any city or county. Of course we will always
have the man who knows a lot better than his
neighbor what breed is best suited to his con-
ditions. The exchanging of desirable sires and
overcoming the difficulty of sending females a
long distance for breeding are strong reasons
for the community breeding plan.

Buyers will always go to a place where a large
number of animals of one breed are available. It
is an advertisement to any community and we
are surprised that a greater number of people do
not put it in practice.

THE CONSTRUCTED CROP.

Farming at best is somewhat uncertain. There
are so many factors affecting the prices of farm
products and so many uncertainties about the
weather that the farmer is never sure that he
will have a successful year. Part of this uncer-
tainty is overcome by contracting at the begin-
ning of the season for the price of the crop. This
is done for most of the crops that are used in
manufacturing, such as peas, tomatoes, cucum-
bers, and sugar beets. Sometimes potatoes and
fruit are contracted in the spring. We believe that
the farmer will do well, where possible, to raise
at least some contracted crops in order that his
returns can to a degree be depended on. The high
contract price of sugar beets this year makes it
a particularly desirable crop in this connection.

THE SUGAR BEET ACREAGE

Many new sugar factories are being built in
the intermountain country to handle the rapidly-
increasing acreage of beets. Nothing could tell
more certainly the permanent agricultural pos-
sibilities of a region than to see these expensive
structures in course of construction. They in-
sure a relatively high value for the land in all
the regions where they are built and they add a
stability to the entire agriculture of the regions.
It is hoped that the farmers will fill their con-
tracts in order that the new factories will become
firmly established and not have to be removed.
With the present high price of beets the farmer
can make a very satisfactory profit raising
sugar beets, and he can depend on his money at
harvest time.

BUY YOUR SEEDS EARLY

We have suggested a time or two to buy your
seeds early. This was good advice to the man
who did not have his potato seed. The price has
gone up. It may be equally true of some other
seeds. First plan your work so that you will
know the kind of seed you are going to use, then
buy the very best seed you can secure. Always
remember that all things being equal the best
seeds will always produce the best crops. This
year you should produce the largest yields, be-
cause the prospects are good for a good market.

The best seed is always the first to go. If you
get your seed early and find much weed seed in
it, you can return it. If you have your seed
early you have time to test its vitality.

Buy your seeds early and be sure you get only
the best.

DRAINAGE

It is a crying shame that so much of our land
is made practically worthless by being water
logged. All this land can be made valuable and
productive if properly drained. Much of this
land when drained would be able to produce en-
ough the first year to pay the cost of drainage.

Water-logged land can be found in nearly every

community in tracts of a few acres to some areas
covering several thousand acres.

Why let this land lay idle, when it can be made
profitable for only a few dollars per acre? Government and State experts will advise you as
to the possible cost and without any charge for their
services. Discuss this question of drainage with
your neighbor who owns some of this land and
create a drainage district. It has been done in
other places. — A good state law covers all this
work and is a big help in carrying out the work.
Get busy now and bring under cultivation this
land and make it produce something. Now is the
time, some one must lead out, why not you. A
little co-operation on the part of the land owners
is all that is needed.

GOOD ROADS

The people of this state are learning the value
of good roads and, judging from the movements
under way, we will have a great deal of work
done this year for good roads.

Our Dixie friends of St. George and Santa
Clara are to be commended for the work they
are doing. When people will leave their own
work and give their time, voluntarily, for such
a cause, like these people are doing to make
good roads, some of us should not object to pay-
ing a small tax for good roads.

The people of Utah County will vote on a bond
issue within a short time to spend \$750,000.00 to
build a concret cement highway through the
county.

If the legislature have their way, we will spend
two million dollars for good roads, besides the
regular funds provided for.

Such interest shows what the people think
about good roads. When our roads are built
right and are of service to the people it is money
well spent.

FOOD CROPS ARE SHORT

From present indication all farm products are
going to bring a high price. Reports from 48
countries, including the United States, the wheat
crop is short 500 million bushels comparing 1916
with 1915. With the export demand one can
see what it will mean to prices. The potato crop
is short several million bushel, Utah, however,
produced more last year than during 1915. The
price of potatoes has gone "out of sight" as one
farmer put it. Selling in car load lots at 5 cents
to 6 cents a pound, \$3.00 to \$3.50 a bushel no
wonder they have food riots. Cheese that sold
a few months ago at 17½ cents to 20 cents is
now 25 cents to 35 cents. Other prices might
be given but this is enough to show how prices
have advanced. Now what are the farmers go-
ing to do about it. How are you going to help
conditions.

You can help and at the same time help your-
self. Produce more and better crops. Make
every foot of ground yield something. In this
way, you will have more to sell which will help
relieve conditions and will at the same time help
you. Your profits will be increased because of
the greater production and the prospects of good
prices will reward you for any extra effort you
may put forth in order to increase the food sup-
ply so necessary to feed the world. Plan to raise
more live-stock, more grains, more beets, more
hay, etc.

The prospects for the farmer never looked
better. It is up to you to make good this year
and grow the largest crops your farm ever pro-
duced.

HOW TO GET RID OF SOME FARM PESTS

(Continued from page 3)

The Alfalfa Weevil.

When the first crop shows signs of serious injury, it should be cut and removed from the field as rapidly as possible. Then go over the field with a spring-tooth harrow or alfalfa cultivator, following this treatment with heavy brush-dragging. If the field is heavily infested with worms, it may pay to cross-drag it. This treatment, if properly carried out, should leave the field with a fine dust mulch over the surface and the alfalfa seems bare, all the leaves being torn off them.

Several benefits accrue from this condition to carry a second crop and condition to carry a second crop and the harrowing and dragging has killed many of the larvae and tender pupae. The larvae that survive the treatment have to crawl through fine dust to reach the stems, and the few that really get to the stems find little upon which to feed. A few hours in the dust or unprotected on the stems by shade gives the hot sun an opportunity to kill many of them. It is well not to irrigate for one or two days in order to allow the sun and dry dust to get the best results. The second crop will now start quickly and grow practically unmolested by the weevil. On land treated by the simple method, the gain has been from 1½ to 3½ tons per acre for the full two cuttings, as a result produced at an outside cost of \$1.25 per acre.

Brush Drags.

There are many forms of brush-drags, and not all of them are successful. A drag made by tying together at the butts a number of pieces of brush (Fig. 11) might as well be left off the field. There is no means of holding this brush down on the ground where it will do the work intended. In making a SUCCESSFUL BRUSH-DRAW, keep the brush as flat as possible. Keep the butts low and let each be separately fastened on top of a plank or pole or pushed through holes bored in the pole. The butts may be nailed, bolted, or wired into place, and another plank laid over the butts and firmly fastened down will aid in making the brush more secure. An ordinary harrow laid on the brushy part of the drag will aid in evenly weighing it and will help to drive the brush into the hollows and crevices and to tear the leaves and stubble. If desirable, a plank or log may be laid across a drag on which the driver can stand out in any case the brush needs weighting down in some manner.

Rotation.

It does not pay to run alfalfa longer than four or five years in a weevil infested district. Old alfalfa is always more seriously injured. It seems to lack the necessary vitality to put forth the several extra crops of leaves necessary where the worms are numerous. Alfalfa can be readily started over in a severely infested region by planting with a nurse crop.

Clean Culture.

To destroy the hibernating places as far as possible should be the aim of a careful farmer. This means: clean up the weeds, grass and rubbish along the canals, ditches and fence rows. Destroy old stack bottoms. Do not leave small piles of hay in the field. Burn or plow under the dead leaves, weeds, stalks, etc., left in the field at the close of the season. Do not leave large manure piles or other unnecessary materials around the

barns and outbuildings. Cut and remove the alfalfa along the borders of the fields, as well as you do that in the center.

Fusarium, Wilt and Blackleg—Potato Diseases.

Both these diseases are alike in that they live over winter on the inside of the potato tubers, and from the disease hills in the field they enter the potato through the stems by which those potatoes are connected to the main potato vine. Whenever these diseases enter a potato they turn the flesh, with which they come in contact, brown. A thin slice should be cut from the stem end of each potato to be planted. Potatoes which show a brown streaked color in the white flesh are diseased and should not be planted.

Sometimes potatoes become diseased with Blackleg because they grow near a diseased hill. The disease in such cases enters through the breathing pores found all over the potato and not through the stem end. Disease can be eradicated from such potatoes by giving them the same treatment as used for Rhizoctonia and Scab.

Rhizoctonia and Scab.

These diseases live over winter on the surface of potato tubers. The former looks like tiny black specks of clay which stick very close to the surface of the potato, and when wet go jet black.

Scab looks like roughened ridges of the potato skin, making the potato rough in spots. No one wants to buy such ugly potatoes. These diseases can be killed by soaking the potatoes in a solution of corrosive sublimate for two hours. To make this solution dissolve four ounces of corrosive sublimate in thirty gallons of water. Use a wooden or granite ware container. The solution eats metal. It is very poisonous. Treat the potatoes after you have thrown away those diseased with Fusarium Wilt and Blackleg. In that way the cut surface of the remaining potatoes will be sterilized and the discarded potatoes may be used for food.

Potatoes should never be planted upon land which has recently been in potatoes, because all of these diseases live over in the soil for about five years. Broken up alfalfa land is very good for potatoes.

In order to get seed for the following year, hills which show the disease at any time during the summer should be dug by hand and removed from the field before the main crop is dug. By following these precautions it is still almost impossible to grow potatoes absolutely free from the disease, though the per cent of disease may be reduced to one per cent or less. These methods should therefore be followed year after year, and not one single year only.

The corrosive sublimate solution should not be used to sterilize more than four sets of potatoes, because it loses strength with each treatment. After the fourth treatment the solution should be thrown away and some fresh made up.

In case it is impossible to get corrosive sublimate, treat the potatoes by soaking them for two hours in a solution of formalin, one pint in thirty gallons of water. This solution should not be used more than twice. It does not kill Rhizoctonia as completely as corrosive sublimate, but it reduces the amount of disease very greatly.

The small grains are attacked by the smuts to such an extent that it is

(Continued on page 10)

High Prices Will Continue during next year.

It will be to your interest to produce the biggest crops possible, both in field and garden. Our catalogue tells all about Vogeler's Purity Seeds.

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Easy enough! Just wash the leather in warm water,* using castile soap. Warm right amount of—

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UTAH OIL REFINING CO.

Refiners

Salt Lake City, Utah

When you answer advertisements, mention the Utah Farmer.

MANY SUCCESSFUL AGRICULTURAL MEETINGS

(Continued from page 5)

ing storage are generally greater with roots than with silage.

There are several points to consider in deciding what type of silo shall be built. The silo should have tight, smooth walls, and be strong enough to withstand the pressure of the silage. It should be so constructed that it will stand up under wind pressure, and be easy to keep in repair. It should be easy to construct, require very little skilled labor, and should be cheap.

There are many types of silos, constructed of different materials, such as brick, stone, hollow tile, cement blocks, cement plaster, reinforced concrete, and wood. All of these materials except wood meet the requirements for an ideal silo in Utah. Wood is used where a temporary structure is desired, but under Utah conditions it dries out, and to keep a wooden silo air tight is difficult.

GOVERNORS DAY.

Governor Simon Bamberger and the members of both houses of the State Legislature were able to visit the College during Round-up week February 2, the day of their visit, was celebrated as Governor's Day. The College visitors were entertained at a luncheon held in the library, following which a general assembly of the executive and legislative parties, the round-up and conference visitors, and many other friends of the College numbering over two thousand in all, was held in the College chapel.

Hon. Lorenzo H. Stohl, president of the Board and Trustees of the Utah Agricultural College, delivered the address of welcome. In referring to the work of the institution he declared that its history had been an open book, on the pages of which could be found much that accounts for the rapid advancement of Utah. The College ask only for that aid from the State that is absolutely necessary to carry on its constructive work. I predict, that under the leadership of our widely experienced and noble hearted governor there will be no cessation in the advancement of the Utah Agricultural College, but rather a growth in this and in all other State institutions.

Governor Bamberger found the heart of his audience when he declared that during his administration there would be no consolidation of educational institutions in Utah. Whatever changes may be deemed wise from a financial and economic point of view, the two great State institutions will continue to exist as separate institutions.

Here the governor concluded his address, but the applause was so great that he was forced to resume. Continuing, he declared that the training that is being given by the Utah Agricultural College is valuable because practical. He told of being invited to partake of a meal at a little farmhouse out in Uintah county, in an undeveloped, desert like district. The farmhouse was distinctive because of its well kept flowers, and attractive shrubbery. The meal was not only wholesome and delicious, but it was served by the housewife with all the distinction that we would find in a modern city cafe. Both the husband and the wife were graduates of the Utah Agricultural College.

Secretary of State Bennion asserted that the College is famous for the men and women who have left its halls and have made Utah a greater

State, because of training received while students.

Senator James Funk, president of the Senate felt that no greater commendation could be given of the great work being done by the College than by noting the fact that its student body comprises all, from the young men and women to the gray haired fathers and mothers attending the conventions.

Senator Funk likened the educational system to the farmer who grew more corn to raise more hogs to buy more land to grow more corn to raise more hogs, and so on in an endless chain of growth. He said that we spend money to build schools to train citizens to develop the resources of the state, to get more money to build more schools.

Representative John F. Tolton, Speaker of the House declared that the State Legislature was disposed to give the educational institutions of Utah as much as it possibly could, but that the indebtedness of the State made economy necessary. He said that it will be a happy day when a revenue bill is drafted that will take care of all educational institutions directly out of the tax funds, obviating the necessity of the institutions asking the legislature for any of their funds.

Congressman Milton H. Welling addressed the assembly and President E. G. Peterson gave some salient points regarding the College and its mission, the Utah Agricultural College was keeping in constant touch with the needs of the West and adapting its work to fit these needs.

UTAH IRRIGATION AND DRAINAGE CONGRESS

The first Utah Irrigation and Drainage Congress was held during the Logan Round-up. The purpose of the organization was declared to be "To further the interests of the State of Utah in the conservation of its water and to advance the interests of the State and its inhabitants in perfecting and protecting all irrigation and drainage interests." The following officers were elected: Mathonihah Thomas, of Salt Lake City, president; W. D. Beers, Salt Lake City, John C. Wheelon, Garland, and A. F. Cardon, Logan, vice-presidents; O. W. Israel, U. A. C., Logan, secretary; E. P. Ellison, Layton, treasurer; Olof Cronquist, North Logan, D. D. McKay, Ogden, R. S. Collet, Roosevelt, James A. Melville, Sr., Delta, R. D. Young, Richfield, Carl R. Marcuson, Price, Wilford Day, Parowan, C. F. Brown, Salt Lake City, Fletcher B. Hammond, Moab, and James R. Murdock, Heber City, board of governors.

The Determination of Vested Water Rights.

The determination of vested water rights was discussed by President Mathonihah Thomas before the Congress on Wednesday, January 31. The pioneers established three things in their settlement of the water question in Utah. They established the ideas of the state ownership of water, state control of water, and insisted on the beneficial and economic use of water. All rational irrigation legislation must be based upon these three principles, and we must come back to them before we can expect any permanent solution of the water question in Utah.

The farmer cannot own so much water in an irrigation ditch. Not until that water is actually being applied on his land does he own it. The farmer really owns the use of the water, rather than a specified amount of

LOUDEN Litter Carrier

ROLLS UP PROFITS EVERY DAY

Saves half the time.

Cuts out back-breaking labor.

Makes the daily task of barn cleaning less disagreeable.

Saves the full value of wet manure and increases the fertility of your farm.

The man or boy doesn't shirk the job—keeps the barn more sanitary, the cows healthy, increases the quantity and quality of the milk yield.

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H. J. Slotten, owner of Walhala Stock Farm, Somers, Iowa, writes: "The Litter Carrier has been in daily use for four years and has not given us a bit of trouble—is as good today as when I bought it. It is surely a labor saver; can clean the barn in half the time and get the manure away from the building with little labor."



Louden Emancipator Litter Carrier.

Louden Feed and Litter Carriers

Have wide roller-bearing trolleys, powerful lifting device—no hit-or-miss ratchets. A 10 or 12 year old boy can operate them easily and safely.

Built in various styles to suit every barn; tracks arranged to meet your special needs.

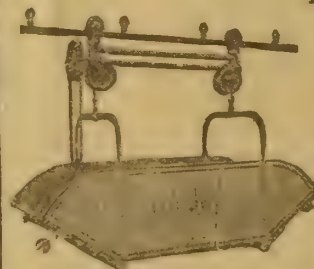
Cost of equipment is a trifle compared to the enormous saving effected by it.

A postal will bring you our big illustrated Barn Equipment Catalog—write for it.

MILLER CAHOON CO.

Murray, Utah

Idaho Falls, Idaho



Louden Double End Feed Carrier.

American Fence

Woven with a mechanically hinged joint. Big, full gauge wires—full weight—full length rolls. Superior quality galvanizing—proof against hardest weather conditions.

American Steel Fence Posts last a lifetime. Hold fence secure against all conditions.

Sent Free—Our Book, "How to Build a Fence."

Dealers Everywhere

AMERICAN STEEL & WIRE COMPANY

Chicago New York Pittsburgh Cleveland Denver

Awarded Grand Prize at Panama Pacific International Exposition
The Supreme Award of Merit

When you answer advertisements, mention the Utah Farmer.

FARM VALUES AND RAILROADS

THE greatest industry of the United States is farming. Next to that comes transportation.

Speaking for 90% of the railroad mileage of the country we invite your co-operation in the solution of the railroad problem to that end.

There is no question that public regulation of transportation has come to stay. The railroads accept it. They ask only that such regulation be made efficient. They ask that the functions properly subject to public supervision—incorporation, the issuance of securities, the making of rates—be placed under the direction of a single responsible national body such as the Interstate Commerce Commission, with regional sub-commissions, in order that regulation may be kept close to the people. They ask that such regulation be so administered as to permit the railroads to earn a living return, to attract new capital and to make the improvements and extensions necessary to enable them to serve the American people fairly and efficiently.

In the Federal Reserve and Rural Credit Banking Systems the operation of regional divisions under Federal supervision is well illustrated. The railroads seek a similar solution of their problem.

The farmer wants free trade among
the states.

Commerce in farm products is not confined to state lines. It is nation wide. Its regulation should also be national. The fundamental state right is the right of each state to be protected against discriminations by other states such as exist today. Every barrier that a state erects to the free movement of commerce across its borders limits the farmer's market, makes it easier for speculators to control products and depress prices and tends to increase the cost of what the farmer has to buy.

The railroads cannot serve 49 masters in 48 states and the nation—and serve efficiently. The present system of multiple and conflicting regulation is wasteful and destructive.

In the interest of all, regulation should be in behalf of all the states. We invite discussion of this question and shall be glad to answer questions and to supply information on request. This is the first of several brief talks on this subject.

Broadway **New Work City**
FRANK TRUMBULL, Chairman
FRANCIS H. SISSON, Assistant
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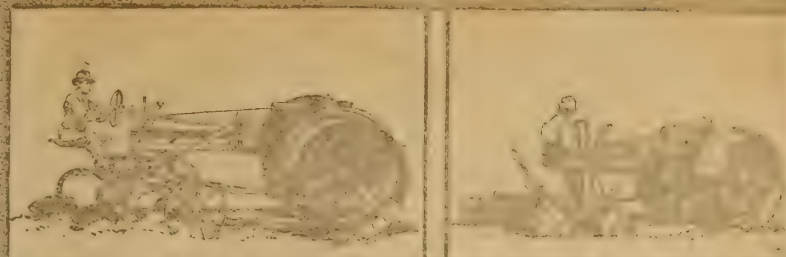
The average irrigation company in Utah today is not efficiently organized. Business principles applied to canal management, and proper co-operation on the part of the farmers will do much to clear the way for a solution of irrigation problems here.

Title Draining of Water-Logged Lands
Remarkable profits are possible from the tile drainage of water-logged lands, stated Mr. J. C. Wheelon, of Garland, Utah. By proper draining, worthless lands have often been turned into the most fertile of farms. In Illinois from \$25 to \$60 per acre has been added to the value of land by drainage. In Indiana, the value of much water-logged land has been increased from \$30 to \$75 an acre. In Utah, although not much drainage has been done, enough has been done to show the practicability of that method of land reclamation. There is a substantial competency for any man in the drainage of his farm and a satisfaction in the operation of a well drained farm that cannot be measured in money. There are 200,000 acres of land in Utah at present that can be drained at a profit of \$10,000.000.

OF FARMING

In this connection rural co-operation is an important factor. Attorney Frank B. Stephens of Salt Lake City showed the farmers at the Round-Up the immense advantages of wise co-operation. The farmer cannot make money on his farm today, without co-operation. Capital is organized, labor is organized, but the farmer standing between the two, is in an unorganized, helpless condition. The farmer of today, is being polished between the two millstones of big business and labor and he is being "polished clean."

Rural co-operation has taken several forms. Buying has been done co-operatively in which everything from mush to threshing machines has been purchased. Co-operative selling of farm products has been practiced to less extent, but with good results. In many communities co-operation among the farmers has resulted in the establishment of creameries, cheese factories, condensed milk factories, and other finishing plants, owned in common. Co-operation in the securing of capital has met with success in the past and in the future it will be fostered by the Federal Farm Loan Act. Perhaps the most beneficial form of co-operative endeavor is co-operation saving. Conditions are always such that co-operative saving can be instituted with beneficial results. In this form of co-operation, the farmers organize, elect a bonded treasurer, and pay regular sums into a common fund. Money from this fund is supplied on good security at a low rate of interest to farmers who need it for farm improvement. When the farmers have once got together for the purpose of



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saving money, the other forms of co-operation readily follow.

Co-operation in the rural community is merely the application of modern business principles to farming. By it, the farm can be made more profitable and attractive. What is of as great importance, the barriers between neighbors are broken down and they are united in a bond of good fellowship.

The Federal Farm Loan Act.

The principles of the Federal Farm Loan Act were explained for the farmers and business men at the Round-Up by Dr. George Thomas. Dr. Thomas stated that the idea underlying the present act was first developed in Germany when, at the close of the Seven Years War, the German farmers found themselves impoverished. They then formed co-operative borrowing associations that secured money by selling the bonds. The idea has spread all over Europe.

The United States Act provides for the establishment of twelve federal farm loan banks. Stock in these banks may be subscribed by individuals, farm loan associations, and by the government, in case any of the stock remains unsubscribed. The government has appropriated \$9,000,000 to be used to buy what stock is not taken by individuals or farm loan associations. In order to keep the control of these banks out of the hands of a capitalistic class, it has been provided that individuals owning stock may receive dividends, but they may not vote their stock. The government may vote its stock, but it may not receive dividends. Farm Loan Associations may both vote their stock and receive dividends.

Wherever ten or more farmers desire to make use of the Farm Loan Act, they may do so by forming a Farm Loan Association. Every member of the association, with the exception of the secretary and treasurer, must be a borrower. These farmers can borrow money for legitimate purposes from the bank in their district. Long time loans will be made at a low rate of interest on an easy payment plan.

The Business and Agricultural Outlook After the War.

Professor George B. Hendricks discussed the conditions that we can reasonably expect to exist after the present war. Professor Hendricks said that the present rise in prices since August, 1915, has never been paralleled in the history of the

civilized world. The increase in the average price of all commodities for this period has been over sixty per cent. Today we see the highest price level that has ever been reached on a basis of specie payment. New York now holds the position in the financial world formerly held by London. The available evidence points to the conclusion that prices will go down soon after the end of the great war, but they will come at rest at a price level considerably higher than the level preceding the war. As soon as the war is over there will be a big demand in Europe for capital, in America for labor. It is hard to say whether capital will leave this country to a greater extent than labor will leave Europe, but conditions seem to warrant the conclusion that this will be the case. If our present diplomatic difficulties lead us into war, all of these calculations will be upset.

The College Man on the Farm and in Business.

The college man of the past has too often been incompetent when he has come up against the real knocks of the world to be found in business life, or on the farm, said Mr. Will G. Farrell. His training has not been practical, it has not taught the student perseverance. Happily, the institutions of today are adapting themselves to the practical needs of the world. Such an institution as the Utah Agricultural College, in its admirable adaptation to the needs of the West, must prove a mighty factor in the development of our glorious country.

Utah Made Goods are Best.

With 13,000 square miles of coal area, Utah coal fields will last for 49,000 years at the present rate of mining, said Mr. Owen Nebeker. Last year the Utah mines produced between three and four million tons. This output should be doubled, however, because the mines were running only one half of the time. Such an increase in production, with no additional outlay in capital, would naturally decrease the cost of coal.

Utah is famous over the entire nation for many of its products. The best woollens produced are made in Utah. There are 356 manufacturing plants in the State, making 121 different articles.

HOW TO GET RID OF SOME FARM PESTS

(Continued from page 7)

unwise to ever plant wheat or oats without first treating the seed.

The treatment usually recommended for the covered smut of wheat and loose smut of oats is as follows: Place one pint of formalin containing 40 per cent formaldehyde into 40 to 50 gallons of water. Immerse the seed in burlap sacks in this solution for about ten minutes, then remove and allow to drain. Let the wet grain remain in a pile covered with sacks or other similar material a number of hours, after which it is spread out and allowed to dry as rapidly as possible. As soon as dry it is ready to plant. There are a number of other treatments that are good, but formalin treatments seems to be the most successful.

J. C. Hogenson.

Roe Gilmore came into our sanctum yesterday and after a good deal of fussin' around laid an egg of unusual size on our editorial desk. It measured seven by eight and a quarter inches. We still have the

egg and can prove it.—Green Ridge (S. C.) News.

TO-DAY

Old Yesterday hain't no more use
Than rubber boots is to a goose;
So saddle up and ride away
From that there wuthless Yesterday.

Hook your spurs in the broncho Hope
And hit a high and swinging lope
Across the Range of Things That Are;
Leave the old past so blessed far
Behind that you can't even view
It thru a glass if you try to.

Your failures? Shucks! forgit 'em all;
Don't let 'em know you hear 'em call.

Look up and see the rainbow smile;
To-day's the only time wuth while.

To worry is to show your hand
To every fellow in the land;
To worry is to let folks know
You think you hain't a fighting show.

You can't win fame or even pelf
Unless you sort o' bluff yourself—
Into believin' that you be
Plumb failure-proof; and then, by Gee,
You want to size things up correct,
Just as they be and don't select
A pile of dirt where gophers sit
And make a mountain out of it.
And don't fergit the sayin's true,
There's millions far worse off than you.
—Author unknown.

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Salt Lake

MY WAY OF GROWING

SUGAR BEETS

(Continued from page 3)

where my soil lacked in fertility, a very profitable thing to do would be to plow the third crop of alfalfa under early enough to let it decay and pass off into the soil. Then just before the ground freezes in the fall, re-plow about eight inches deep. I recommend fall plowing in most all of our soil.

In the spring, as soon as the ground is dry enough to get out and work thoroughly with a harrow or spring toots, make a seed bed and mulch that will hold the moisture to bring the plants through.

To much emphasis cannot be placed upon the importance of putting

the ground in the right condition to receive the seed and to grow the crops and every hour spent in properly preparing the seed and root bed will well repay the grower.

Another important point in preparing the ground for beets is to see that it is properly leveled; the high parts should be worked down and the depressions filled. In some fields, this will require considerable labor, but it will pay to do this work thoroughly before planting sugar beets. A properly leveled field can be irrigated much more quickly and further more if it is not properly leveled, there will be high spots where the beets suffer from lack of sufficient moisture and low spots where the plants are injured by too heavy watering. The results in such fields are invariably disappointing from the standpoint of yield.

Planting and Care of Beets.

The proper use of irrigation water is one of the most important factors in the growing of sugar beets. The time, and method of application and quantity of water used are essential. Some years it is necessary to irrigate your beets earlier than other years, depending upon the amount of precipitation and the weather. One cannot be too careful in watching his beet field this time of the year. The amount of water necessary depends some on the soil, but in the majority of cases, two—not to exceed three—irrigations per season will mature sugar beets. I am in favor of more cultivation and less irrigation.

One of the prime objects in making fine compact seed and root beds is that more moisture may thereby be retained in the soil for plant growth. Likewise, fall plowing not only affords an opportunity for the soil to absorb the winter rains and snows, but the ground becomes compact by the action of the elements and is for this reason capable of holding its moisture for a much longer time. It is almost impossible to pack the soil by artificial means as thoroughly and uniformly as it can be done by nature. For this reason, spring plowed land is much more liable to lose its moisture and therefore to require a greater amount of irrigation from the standpoint of compactness alone.

In addition to these methods as factors in retaining soil moisture, the importance of a good supply of humus in the soil should not be overlooked. Humus affords a good medium in which the soil organisms can live and thrive and liberate plant food, but they can perform their function to a much higher degree because of the additional moisture which the soil is able to retain on account of the presence of humus. If then, the soil has been supplied with the required amount of humus and has been plowed uniformly deep at the right time, much has been done towards furnishing the plants with the moisture needed for plant growth. Special attention should then be paid to keeping the surface of the soil constantly in the form of a mulch. This mulch acts as a blanket in retaining the evaporation from the soil below. I repeat, I believe in more cultivation and less irrigation.

It has been my observation in irrigating sugar beets, the quicker the water can be run over the ground, the better. Great care should be taken in irrigating beets when the sun is extremely hot, otherwise they may be scalded in a very few hours. There are hundreds of tons of sugar beets lost to the farmers each year

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Heavy high carbon steel beams; high throat gives rest clearance for trash. In turning, the rear wheel rotates automatically, going back to its natural position as the plow resumes a straight course. Hitch adjustable for 2 or 3 horses, and for different depths. Hangers can't drop down on heels of horses. Will plow from 2 to 8 inches deep. Cushion spring absorbs all jolts and vibration when working in rough ground. Conveniently placed levers give easy control of plow. Wheels equipped with dust proof fenders, with sand bands and screw caps for using road oil. Bottom is built on heavy double ribbed steel. Alfalfa shares interchangeable with regular area.

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by carelessly letting the water stand on the ground too long. I am not in favor of irrigating sugar beets in the spring as long as the plant stays green all day. With the proper cultivation, the plant root runs deep into the ground and makes a far better sugar beet. By early irrigation, the roots spread out and grow a short stubby beet. By so doing, the farmer loses tonnage and the sugar company doesn't get the saccharine.

With the plowing done in the fall and the beet bed properly prepared in the spring, the principle factors to be considered in connection with the planting of the seed are the time, the depth of planting and the distance between the rows. The seed should not be put into the ground until the soil is warm enough to produce a quick germination, and a rapid subsequent growth. Nothing is to be gained by putting the seed into the ground before the soil has reached the proper degree of warmth. Indeed, if the seed lies in the ground when conditions are not right for germination, it is liable to rot and even if it does not rot, the resulting plants when they do finally develop, will usually be weak and unsatisfactory.

On the other hand, the planting should not be delayed until the moisture has escaped from the seed bed, therefore no date can be specified as the best time for planting, but the soil itself should be the guide in this operation. Usually there is a period from two to three weeks when conditions are right for planting.

The seed should be planted just as shallow as is consistent with quick and uniform germination. The depth of planting will vary, therefore, with the nature of the soil and conditions of the climate. The seed should always be put into the fresh soil and the soil should be capable of holding its moisture long enough to produce germination. Having secured a good germination and stand, it next becomes necessary to thin the beets down to one in a place. Great care should be taken not to leave double beets as they never amount to much. If the rows are twenty inches apart and the beets stand ten inches apart in the row, each beet will have an area of 200 square inches from which to draw its food and moisture.

There is a three-fold purpose of cultivating sugar beets, namely, the
(Continued on page 14)

HOME

HOUSEKEEPERS' CONFERENCE

The large registration of women and the sustained interest manifest throughout the week in the practical courses as well as in the general sessions for women and in the conjoints made this year's Housekeepers' Conference at Logan particularly successful. Much of the work was centered around the care and nutrition of the child. This made the practical course in mothercraft especially popular.

Preparedness in the Home.

Mrs. Harriett L. B. Darling, discussed before the conjoint session of Monday, preparedness in the home. The present high prices are likely to prove a blessing. They will make necessary the introduction of efficiency into household management. Substitutes for high priced foods must be found. Cheese will have to replace meat in a great degree. Beans and peas will also be used as meat substitutes. In New England, sirloin steak is selling today for 48 cents a pound and round steak, for 39 cents. Co-operation among housewives has decreased living expenses. These housewives buy in bulk directly from the farmer.

It is not wise to boycott eggs and refuse to eat them because of their high price. They are a very valuable article of food. The better plan is to buy eggs in April and May when they are less expensive and to preserve them for the winter months. The canning of meat, which Utah women are doing much of, is an excellent preparedness move.

The Development of the Child.

Miss Alice Ravenhill explained the close relationship existing between the development in the child of such vital organs as the brain, the heart, and the lungs and the outward activities expected to work for nothing any more

of the child. The child's brain is large but undeveloped. It consists of largely unrelated brain cells. With each succeeding experience these cells become connected. Muscular activity feeds the brain because it causes a generous flow of lymph, carrying food for the brain, through the blood vessels.

The heart is relatively small in the child. It increases twelve times in size before maturity. Up to the age of puberty the blood pressure is low, but from then on it increases rapidly. For this reason, a child is not able to endure sustained effort without suffering injury. Thus, continued hard work on the farm should not be required of the child. The child needs alternate periods of rest and activity. In school, the lesson periods should be short, each followed by a few minutes of vigorous exercise, play in the open air being better than class room calisthenics.

The lungs are very small in the infant. They increase twenty-five times in size by maturity. Great care should be taken to secure a good, healthy development of the lungs by encouraging correct habits of breathing. Nothing is more conducive to good health than a strong pair of lungs, capable of keeping the impurities burned out of the body.

Feeding the Infant.

A common mistake in the feeding of babies today is to keep them exclusively on milk for too long a period, said Dr. Raphael Olsen of Salt Lake City, an expert on the care of infants, talking to a general session of housekeepers during the conference. Milk is an almost perfect food, but it is deficient in iron. The baby has enough iron in its body at birth to last it for the first eight to twelve months of its life, but from that time on some food containing iron should be supplied. Scraped beef is an excellent food for this purpose.

The baby should be fed at the breast whenever possible. Bottle fed babies are more subject to nutritional disturbances. One feeding a night is all that should be allowed. Under no circumstances should the baby be allowed to sleep with its mother for any extended period after birth.

Proprietary foods should be avoided. They tend to develop a large, square head, high palate, distended abdomen, narrow chest, and a weak back.

The Place of Play in the Child's Life.

Play is the child's life, said Miss Rose Jones, talking before a general meeting of the housekeepers at the Housekeepers' Conference. We should look upon the child's play as a sacred thing. It is the preparation for the future. The child starts to play when three or four months old. The first stage of play consists in the child's playing with his toes. From then he gradually develops until he has a desire for bright, glittering toys. Then comes the mischief stage, and the desire for constant bodily activity.

Do not break into the child's play. If you desire to correct him, always show reason for your action, and do not force the child to do a thing just because it is right. It is often possible to turn the child's play into work. It is as natural for the child to work as it is for him to play. When this is done, however, the work should not be made drudgery. The offering of material rewards is not a bad thing. How many grown people would carry on the work in which they are now engaged just because the work ought to be done and with no promise of remuneration. The child should not be



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than should the adult. Giving the child some visible reward for something well done encourages effort and develops thrift.

Puree of Vegetable Soup.

One yellow rutabaga, two medium-sized carrots, four medium-sized pota-

toes; peel, boil thoroughly, mash a press through a colander; season with a tablespoon of butter and salt necessary, then add one can of hot tomato stock (strained tomato juice); place the range and simmer from ten to fifteen minutes. This soup is served quite thick and is most delicious.

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WOMEN AND SUGAR

Though the modern woman is beginning more to accept the dictates of science in regard to food products there still remains the housewife who clings to the methods and traditions of her grandmother. When cane sugar began to take the place of sorghum and molasses for sweetening purposes, housewives were at first disinclined to give the tiny sweetened crystals a place in the family cupboard. However, the connection between cane juice and sugar was not too remote, to remove the initial prejudice; but when some one came out with the statement they could produce as good sugar from a beet, the good housewife merely shrugged her shoulders and remarked probably something like, "Oh dearie me, another fool man gone wrong."

But time has refuted this unjust im-

peachment of the chemist, as the marvelous growth of the industry in Utah will testify. A noted chemist is quoted, "Refined sugar, whether made from cane, beets, corn, maple sap or any other product, is the SAME chemically and physically." A government chemist concludes, "It is impossible to distinguish between refined beet sugar and refined cane sugar. Chemists cannot do it."

These statements, broad as they are, should prove convincing to any housekeeper, but there still remains the woman of the old school who dares to contradict the conclusions of the learned men of the country, and one was recently heard to say, "Well, cane sugar makes better preserves, anyhow." Domestic science schools still have a great work before them.—Ogden Examiner.

Cornmeal Muffins With Dates.

One cupful white cornmeal, one tablespoonful salt, four tablespoonfuls baking powder, two tablespoonfuls brown sugar, one egg, two tablespoonfuls butter, one cupful wheat flour one-half cupful of chopped dates, one and one-half cup milk.

Cook together with meal, sugar, salt, butter and milk for ten minutes in a double boiler. When cool, add the egg, the dates, and the flour into which the baking powder has been sifted. Beat the batter thoroughly until light and bake in muffin tins in a hot oven. These muffins are good with afternoon tea, or for luncheon.

HOME AND LOVE

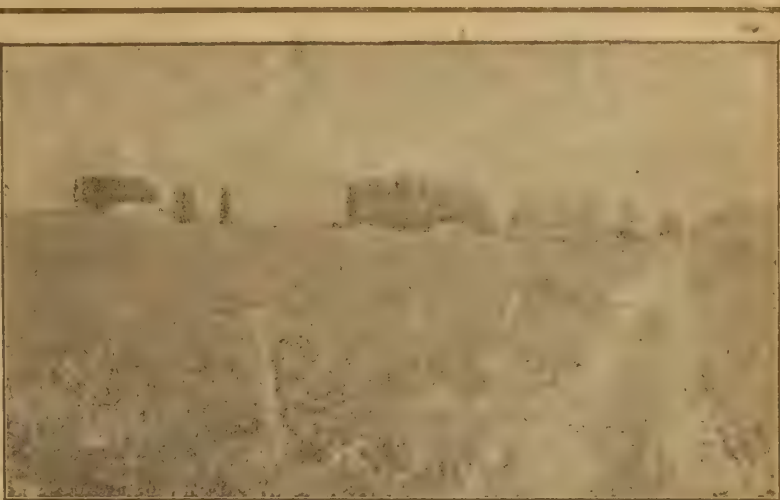
Just Home and Love! The words are small,
Four little letters unto each;
And yet you will not find in all
The wide and gracious range of speech
Two more so tenderly complete:
When angels talk in Heaven above.
I'm sure they have no words more sweet
Than Home and Love.

Just Home and Love! It's hard to guess
Which of the two were best to gain;
Home without Love is bitterness;
Love without Home is often pain.
No! each alone will seldom do;
Somehow they travel hand and glove:
If you win one you must have two,
Both Home and Love.

And if you've both, well, then I'm sure
You ought to sing the whole day long;
It doesn't matter if you're poor
With these to make divine your song.
And so I praisefully repeat,
When angels talk in Heaven above.
There are no words more simply sweet
Than Home and Love.
—Robert W. Service.

IRRIGATORS' QUERIES ANSWERED

O. W. Israelson, U. A. C.
Can I store enough water in the soil to produce a good fruit crop.
Whether or not it may be possible for you to store sufficient water in the soil to produce a crop of fruit is dependent very largely upon the type of soil which you are irrigating. Upon some soils, particularly gravelly loam soils, which have only a very small capacity to retain water, this would be entirely impossible. Such is indicated by various irrigation experiments which were conducted at Brigham City some years ago. These



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Box P U PETERBORO, N. H.



experiments indicated that notwithstanding large, early irrigation, unless the trees were irrigated during July and August, that is the bearing season, the crop was an absolute failure. However, had the same practice been followed on very deep, loamy soils in which large quantities of water could have been stored, the result would very likely have been distinctly different.

It is believed that very small quantities of water are actually used by trees in the production of fruit, and that few irrigations are needed where it is possible to store six or eight inches of water per irrigation. On the other hand, light soils which will retain only one or two inches, must, of course, be irrigated more frequently, and it is impossible to store in such soils enough water to produce a crop.

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\$1500 will buy a 5-room frame home, on a good-sized lot, near 6th East and 11th South. The rear of the lot is planted in fruit trees, which are all bearing. The lot is well fenced. This will make a comfortable home for you and is much cheaper than paying rent. The owner will take lots in Magna as part payment. Reasonable terms.

\$50 down and \$20 per month will buy a modern, 4-room, brick bungalow, with cement basement, located on Ashton avenue near Highland drive. This home is less than one year old. Has all the modern conveniences, including kitchen cabinet and sleeping porch. You should see this house before you buy.

COUNTRY HOME NEAR HOLLIDAY— 4-room modern bungalow; lawn, flowers and rose garden around the house. One and one-half acres of the richest soil, with good water right. All planted to trees and berries. This is just the place to cut down living expenses and still enjoy all of the comforts of city life. \$2700, on reasonable terms.

\$2600 for a new, 5-room, clinker brick bungalow on 11th South near Fifth East. The rooms are large and conveniently arranged. In the living room there is a beautiful mantel, with bookcases on either side. Dining room has a large, built-in window seat, and the floors in the two front rooms are hard wood. The kitchen is complete and well arranged. A cement basement extends under the entire house. Has a south front and has a large porch across the front. We consider this the very best value which is being offered at this price at this time.

\$4700 for a 5-room, brick bungalow, near the East high school. This home was designed by a competent architect and has many features that are not found in most homes. The mantel is large and homelike and the built-in features throughout the house are all that could be wanted. This home has hardwood floors in the front rooms and first-class heating plant in the large basement, and has a large sleeping porch on the south of the house. If you are looking for a bungalow which is convenient you should see this home.

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MY WAY OF GROWING SUGAR BEETS

(Continued from page 11)

destruction of the weeds, the retention of moisture, and the interchanges of grass in the soil. The purposes for which the cultivator is operated should be kept in mind and the cultivator should be fitted with attachments accordingly. In using the weeder, care should be taken that they do not form a crust just below the mulch produced by the weeder blade. This may be avoided by properly adjusting the cultivator blade. While the beets are small, it is safe to cultivate thoroughly deep and quite close to the plants. The depth to which the ground is stirred when the beets are small should never be as great as the depth to which the roots have penetrated and never exceed from three to four inches in order to accomplish the object of the cultivation. As the beets get older, it is usually advisable to set the cultivator so that it does not work so close to the beets; for the reason that the feeding roots must not be disturbed.

The manner in which the beets are handled while small, especially with reference to the soil moisture, will govern to a great extent the position of the feeding roots. If the ground is kept rather moist near the surface, the feeding roots will develop near the surface and great injury may be done by the later cultivation. This emphasizes the importance of withholding the water from the young beets as long as possible so that the main roots will be long and the feeding roots formed well down on the main root. If this is done, a deeper mulch and one that extends closer to the beets can be maintained without injury to the beets. This will be very helpful in retaining the moisture in the root bed and also in maintaining a free circulation of gases in the soil.

Many promising fields of beets are so injured by improperly adjusting and carelessly handling the cultivator, that they become sources of loss rather than profit to the grower. The constant aim should be to keep the beets growing from the time they come up until they are harvested and destroy just as few of them as possible.

The hoeing should be deep enough to destroy all weeds in the beet rows and to form a continuous mulch around and between the beets. The subsequent hoeing should be frequent enough to keep out all weeds and to maintain a continuous mulch in the beet row so that the hoeing combined with the cultivation maintains a continuous mulch over the entire surface of the fields and keeps it entirely free from weeds throughout the season. Unfortunately in practically all sugar beet localities, all hoeing after the beets are thinned consists simply in cutting out the weeds in the beet rows.

Let me say in conclusion; have good soil with the proper amount of humus, plow your ground well in the fall, prepare the seed bed well and plant the beets at the right time in the spring; thin them the proper distance apart, cultivate them at the time and as often as they should be cultivated, and use great care in irrigation. Keep in close touch with the agricultural superintendant of the sugar companies and you will be sure to succeed.

I heard a man one time compare his sugar beet field to a wagon. He

said; one wheel was soil, one wheel was preparation, one wheel was water and the other wheel represented climate. He said, it is just as easy to run a wagon with one wheel off as it is to try to make a patch of beets pay without one of these conditions.—E. T. Capener, Manager Farm and Ranch Department, Kimball & Richards "Land Merchants."

WILL PAY FOR UN-

DELIVERED BEETS

According to a statement made by Mark Austin general agriculturist of the Utah-Idaho Sugar Co. farmers will be paid for beets that they were unable to deliver last fall on account of the early frost which froze the ground so they could not be taken out.

An estimate will now be made by the field men and one dollar paid at once for each ton, latter on the land will be measured and a very careful estimate made and fifty cents more paid making a total of one dollar and fifty cents per ton. The farmers will then be allowed to make any use or disposition of the beets he may desire.

The Amalgamated Sugar Company will, just as soon as the snow is off the ground and they can get at it, measure the beet fields that could not be harvested last fall and pay fifteen dollars per acre for all the beets in the ground.

KEEP STOCK OFF WET LAND

It is a very poor policy to allow any live-stock to remain on land after the snow has melted away and the frost is out of the ground. Especially is this true on heavy land where you have more or less clay.

Stock tramping around on such land will make it impossible to prepare a good seed bed. Wherever they walk the land will be a lump, so hard that no seed can get a start in it. No plant will grow under such conditions. You may think it is only here and there that they walk, but every foot of ground that does not produce will reduce your yield and the loss will be great.

Live-stock should be kept on land under ordinary conditions as it will help to fertilize the land but you should take them off before it gets soft and mirey in the spring.

QUESTION AND ANSWER

Centerfield, Utah.

Utah Farmer:

Do you think it will be profitable to plow up alfalfa in the spring and then sow sugar beets? Please answer in your next paper just how the land should be cultivated for successful beet growing.

Yours truly,

A. A. Beck.

Answered by Dr. F. S. Harris.

On some soils, particularly those that are easy to work, it is possible to succeed with beets on land where alfalfa has been broken in the spring. This practice, however, is not to be generally recommended. It is much better to plow the land deeply in the fall in order that it will have the winter in which to become mellow. On heavy land alfalfa roots are very troublesome the first year as they are likely to interfere with the young tender plants. In light soils these roots do not seem to be so troublesome.

In connection with the preparation of land for sugar beets, I believe you would be interested in reading an



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While the egg market is good, why not make an effort to produce more eggs? Your hens will do better if given proper attention and the proper food.

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warms and stimulates. It is an economical, well balanced meat food that gets results in cold weather.

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Are you working on the farm when you could do better selling goods?

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The Young Man and His Vocation

It is brim full of practical ideas and suggestions for every young man.

It will help you understand yourself better; your possibilities, your limitations.

It will help you choose a suitable vocation, and get the most out of life.

Order one of these books to yourself or boy.

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THE UTAH FARMER
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UTA

article by Mark Austin on Spr Preparation of Beet Land published in The Utah Farmer for February 10, 1917.

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This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions the World's Fair held at Frisco last year. Both Sire and Dam, still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale all times.

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All strictly first-class
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This berry is very highly recommended
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In the great Toledo plant and our other plants we employ nearly thirty-eight thousand men.

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Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 30

LEHI AND SALT LAKE CITY, UTAH

FEBRUARY 24, 1915

Value of Sheep On the Farm

Swen Olsen, Utah County.

Sheep will increase the fertility of the soil if they are handled properly. To do this they should not be permitted to crop off the grass too closely, which they will do if the pasture is overstocked or if they are kept too long in one field. Sheep manure, with one exception, is the most valuable of all farm manures. It is thin and evenly scattered over the ground and does not produce a rank growth in spots of the pasture as do other manures. The manure is also worked into the soil by the sharp hoofs of the sheep, so that it is not washed away but becomes available as plant food. This quality has well earned for sheep the title of "Golden hoof." In England land which during Queen Elizabeth's reign produced only 6 bushels of wheat per acre has been made to yield 30 bushels at the present time by the use of sheep. Better cultured methods may be the cause of a portion of this increase, but without doubt the sheep are responsible for the greater part of it.

Another equally important way that sheep increase the productivity of the land is in their destruction of weeds. By eating the weeds they make more room for the cultivated crops and increase the supply of plant food and water available for them by preventing the weeds from using it. No other class of livestock, with the exception of goats, will eat as many weeds as sheep. By converting these waste products into wool and mutton they are a source of profit to the owner.

It has been estimated that sheep will eat 90 per cent of all troublesome weeds. They are, in fact, commonly used in cleaning up weeds from fields, fence rows, road sides, stubble fields and corn fields. The common belief among farmers is that weeds eaten by sheep are so broken up in the digestive processes that the seeds will not germinate after passing through the body as in the case of other livestock. However, weeds are rarely permitted to go to seed if enough sheep are turned in the field while the weeds are young and tender.

In some investigations carried on by the Canadian Government among a considerable number of sheepmen to determine the kinds of weeds eaten by sheep, it was generally agreed that sheep would consume all but a very few extremely unpalatable ones, such as mullein, Scotch thistle, etc. Upon inquiry as to the specific kinds eaten, one farmer replied that he could not give any definite information on the subject as the sheep kept his farm free from weeds that he could not

see what kinds they actually ate.

Where sheep have been kept, but where for some reason they have been disposed of, a striking difference has usually occurred in the appearance of the farm. Weeds have sprung up and grown where they had formerly been kept in check. There is no better solution to the weed problem than a flock of sheep.

In establishing a flock it is better



Such land can not produce crops until the alkali is removed by drainage.

for the farmer to start on a small scale, unless he has previously had experience. When one is dealing with small numbers, a mistake in management or an error in judgment is not of so great importance as where large numbers are involved. Starting with a small flock requires less capital also.

The farmer's sheep should be a wool and mutton sheep, with emphasis upon mutton. This "dual purpose" sheep, if the name be permissible, is a proved success, and it is already represented in some of the breeds. The best type is the most profitable combination of wool and mutton.

SHEEP ON THE IRRIGATED FARM E. J. Iddings.

Either for mutton or wool production, it is not probable that sheep raising on a large scale can be made successful on high priced irrigated land. There must be more to the industry than marketable wool or mutton, else some other system of using the productive power of the land is preferable.

Sheep may be profitably raised on such lands in two ways: a small bank kept as scavengers, or a pure

Crops For Alkali Land

By Dr. F. S. Harris, Director Utah Agricultural Experiment Station.

In the Western States, which make up the arid part of the country, there are many millions of acres of land containing alkali in sufficient quantities to interfere with the growth of ordinary crops. Where this condition is found it becomes quite a problem to find crops that can be made to pay.

It may be that the crops raised on non-alkali soil can be made to start

growth but the yield is likely to be low; in many cases it is not possible to even get the seed to germinate. Obviously the thing to do in a soil of this kind is to select the crops that will be least affected by alkali salts. In doing this the question of market as well as the resistance of the crop must be considered because it is useless to raise crops that can not be disposed of.

The climatic conditions must also be taken into consideration. For example, the date palm which is probably the most alkali-resistant of the cultivated crops can not be raised in any but tropical or semi-tropical climates. The sorghums can also endure considerable alkali, but they do not grow well in cool climates.

The cereals may be raised for hay on land that is too strong in alkali to produce a good crop of grain. This means that the soils containing the strongest alkali should probably be used for forage crops. Among these, white sweet clover seems to be most promising. This crop can be made to produce a good yield on wet alkali land that prohibits the growth of most of the cultivated crops. Western wheatgrass, downy brome-grass, and tall meadow oat-grass are among the most resistant of the grasses.

Sugar beets if once started can endure a great deal of alkali although the young plants are tender. If the surface soil is high in alkali early in the season sugar beets cannot be made to start, but if the alkali does not come to the surface till during the middle of the summer sugar beets will thrive. Old alfalfa plants will endure very strong alkali at the surface of the land, but the seed cannot be made to germinate if more than a medium amount of soluble matter is present. Often old alfalfa will be growing vigorously, but when it is plowed up, a new crop cannot be started on the same land.

The cereals rank in the following order of resistance to alkali: barley, rye, oats, and wheat. The following grass crops can be raised where the land is slightly too alkali for grain but not so strong as that for the grasses already mentioned: Meadow fescue, Italian rye-grass, slender wheat-grass, and millet. Slightly less resistant are: red top, timothy, orchard grass, kaffir, and milo.

The crop to be selected for alkali land depends on a number of conditions but the crop mentioned probably includes all those that will be raised extensively in the Intermountain States.

(Continued on page 16)

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Beet Growers to Fix Price

"If the farmer who grows sugar beets wants the price of \$7 per ton—which is the highest price ever paid in the United States for a 15 per cent beet—to remain after normal conditions in the sugar business are restored, it is largely up to him and the support he gives the established sugar companies," declared an official of the Utah-Idaho Sugar company yesterday.

"It costs a large sum of money to erect an operate a sugar factory, and the yearly expense of maintaining an organization, that is to be used just a few months during the campaign, enters into the cost of the finished product to quite a considerable extent. If a factory—no matter whether it is a cannery, sugar mill, flour mill, or what not—has a certain given capacity in twenty-four hours, and is able to secure raw material to run only 90 per cent capacity, it cannot operate so successfully and turn out the finished product as cheaply as it could were it able to run 100 per cent capacity.

"With the normal prices of sugar—the prices prevailing before the war—it will be impossible for the sugar companies to pay \$7 per ton for beets, unless they can secure enough to operate their factories for a longer period each season and crowd them to over capacity, and in this way cut down some of the fixed expenses per ton of beets thus enabling them to pay this difference to the beet growers. So it is largely up to the farmers to determine what price they will get for beets.

"From the way the old beet growers are signing for increased acreage and by the number of farmers contracting who have never grown beets before, the indications point to the most successful year in the industry and with the high price offered for beets it is easy for the farmer to figure that he can make more money growing beets than any other crop. He also knows that by contracting with the companies that have been established for years that he stands a better chance of getting more for his beets than by contracting with a promoter, because a glance at his leaving it to the old established companies to make the price and he merely agrees to meet it, so it is up to the wise farmer to maintain the present high price of beets."—Herald Republican.

SUGAR BEETS BEST OF CROPS FOR REBUILDING ALKALI SOIL; DRAINAGE SYSTEM VALUABLE

In all parts where the rainfall is under 20 inches, soils so charged with soluble salts that plants cannot grow upon them are found, and these are known as alkali soils. They are the result of certain conditions: Not enough rainfall to work out the soluble salts as in humid regions; poor drainage, allowing the water to gather in low places; and excessive surface evaporation that takes place in the semiarid regions, bringing all the soluble salts to the surface in a more or less concentrated form. When these soils are reclaimed they are as productive as the surrounding soils in the same region.

There are two classes of alkali soils, the "White and the "Black" so called from the color given the soil. The White alkali is due to common salt, Glauber's salt, and Epsom salt, Black alkali is far more injurious to plants and is due to Sodium Carbon-

ate, (Washing soda) along with the before named salts.

Plants take their food from the soil in a weak solution and in alkali soils the soluble salts make the solution so strong that plants cannot take up the moisture from the soil. The Spring rains dissolve large amounts of salts and in dry summers excessive evaporation takes place, bringing the salts into the root zone in a concentrated form, causing the plant to quickly succumb to drouth. Thus we find alkali most injurious after good spring rains followed by a dry summer.

As poor drainage is usually the direct cause of alkali, the first step in the treatment is to apply the best possible drainage. Tiles or open drains on irrigated lands will suffice as a rule, though the cost is high. After the best possible drainage is secured the application of straw manure at the rate of 15 to 20 tons to the acre should be made. This, followed by deep plowing, makes the soil more porous, allowing better drainage and preventing puddling and baking. It acts as a mulch, preventing surface evaporation and supplying the young plants with food, surface cultivation in the spring as soon as the land will permit is a necessity. Thorough cultivation must always be maintained in the spring before the crop is planted. Next comes the question of the crop to be planted on this alkali soil. What is wanted is a crop that will remove the alkali and at the same time give some return for the work of tillage. Of the different cultivated crops, sugar beets will stand the most alkali and at the same time give profitable returns. Of the forage crops, sweet clover is in

a class by itself for alkali soils. The roots of the clover, dying every two years, help a great deal in opening up the soil, either of these two crops will prove satisfactory.

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VOLUME XIII.

LEHI, UTAH, SATURDAY, FEBRUARY 24, 1917

No. 30

Important Drainage Engineering and Soil Problems

An address given at the Utah Irrigation and Drainage Congress at Logan, Utah, February 1, 1917, by R. A. Hart, Senior Drainage Engineer, U. S. Dept. Agr.

Drainage—engineering is irrigation engineering, plus.

The drainage engineer deals with many of the same factors which are of importance to the irrigation engineer, but the situation is more complicated. The drainage engineer is in much the same position as a mathematician called upon to solve and equation having two unknowns.

This subject was assigned me without my having had a voice in the matter. I am glad of it. I could not have chosen a better title to impress the fact that there are two great sets of problems in connection with drainage reclamation of irrigated lands, those of a strictly engineering nature, and those involving considerations of the properties of the soil.

Engineering and soil problems arise in connection with three phases of reclamation by drainage:

1. With the design of the drainage system.
2. With the construction of the drainage system.
3. With the subsequent treatment of the soil when drained.

Each of these phases involve questions relating to surface conditions, and to sub-soil conditions.

The layman is apt to lay too much stress on surface factors, and to ignore sub-surface considerations. I continually receive requests from landowners asking me to "come up and stake out a drain." In some cases the letter goes on to say that the tile has been ordered and is on the ground.

Some engineers, who are pleased to consider drainage as a simple matter and who are content to follow haphazard methods, exhibit little more insight than the layman. I have heard of cases where landowners have hired engineers to lay out drainage systems and the landowners indicated that the lines should go here, and here and here. The engineer merely staked out the drains where directed and went his way. Naturally the system was a failure. The fundamental proposition that drainage of irrigated lands is a highly scientific proposition was entirely overlooked.

The successful drainage engineer is the one who has learned that the ordinary point of view must be reversed. Of course, surveys and other surface studies are necessary but the sub-surface investigations are vastly more important.

Nature, herself, has determined the proper depths, location and arrangements of drains and by a study of the sub-soil structure we may ascertain the required facts as well as obtain an idea of the necessary capacity for the drains.

Design.

A topographic survey of the area to

be drained is generally necessary. This may be made most satisfactorily by means of a plane table. The areas in need of drainage as a rule have been cultivated, hence are free from timber and high brush. The making of a map right in the field has many advantages, chief among them being that observations of existing conditions may be plotted while fresh in mind and that errors of the desirability of additional readings are at once apparent. One instrumentman can keep two or three rodmen busy and

conditions according to state of productivity.

If no alidada and equipment are available, a transit having a long bubble may be used or a fairly satisfactory may be used or a fairly satisfactory engineer's level having a compass attachment.

The purpose of subsurface determinations is to ascertain the source and amount of the damaging water and to obtain an idea of the amount of water that it will be necessary to take care of. It is required to ascertain

augers, or soil augers built up of an ordinary carpenter's bit with gas-pipe stem and handle. The soil is removed by augers—ful and examined visually or retained for subsequent mechanical and chemical analyses. Observation wells may be made with and earth auger and cased with perforated downspouting. Their chief purpose is to provide for the determination of ground-water fluctuations over a considerable period of time and to ascertain the effect of rainfall, irrigation, etc., on the ground-water table. Tests pits are usually dug with picks and shovels but small ones may be dug with telephone tools. They are necessary in case of gravelly subsoils and serve much the same purpose as soil borings beside offering a fair idea of the probable necessary drainage capacity. Experimental trenches are really a development of the test pit and serve the additional purpose of giving a fair idea of construction difficulties and costs.

Let us examine some of the bearings of subsurface conditions on the design of drainage systems. First of all there is the matter of location of drain lines. It is necessary to bear in mind that the movement of the damaging water, under irrigation conditions, is generally laterally. It follows that the interception method of drainage is generally applicable. The most usual location of injured lands is one a comparatively flat slope at the foot of a steeper slope. Experience shows that the logical location of a drain line is at the change of slope. Sub-surface investigation will likely show that the damaging water is moving through a pervious stratum that either pinches out or suffers a change in slope which develops a pressure which forces the water to the ground surface. Manifestly the proper location of the drain is that at which the lateral seepage will be cut off before leaving the pervious stratum.

Under irrigation conditions, the location of drains is the important thing—spacing of drains has little part in drainage practice. If more than one drain line is necessary, however, a study of the shape of the ground water curve will indicate the best spacing.

A study of the ground water table will indicate whether or not it is necessary to locate a drain line adjacent to a canal to catch direct seepage. The same is true of a situation where there is seepage from a shale knoll or a gravel ridge.

Next to proper location, the required depth is of greatest importance, and a study of sub-soil conditions is imperative. In the first place it is necessary

(Continued on page 10)



A good water trough. Something that should be on every farm. Costs very little and when properly built will last many years.

handle about a section of land per day. It is advisable to establish a system of signals and a system of B.M.'s, running a base line between two signals, then running a line around each section and filling in later.

If possible the survey should be made subsequently to the making of the sub-surface studies in order that the ground surface elevations at the various soil borings and observation wells may be ascertained and their locations tied in.

In addition to showing topography, the map should show land divisions, property lines, roads and lanes, railroads and interurbans, power, light and telephone lines, canals, ditches, water courses and bodies of water, tree rows, artesian and other wells, bridges, flumes, siphons, etc., and the drainage outlet conditions, and land

the nature of the soil, the depth to, and thickness of, various sub-strata, the relation of the ground-water table to these sub-strata and to the ground surface topography, the behavior of the ground-water table under various conditions of irrigation, rainfall and evaporation, and the seasonal variations of the depth to the ground-water table, and the effect of saturation of the soil.

The required data may be obtained through the agency of soundings, soil borings, observation wells, test pits and experimental trenches. Soundings may be made in flukible soil by means of long steel rods of small diameter. The chief purpose is to ascertain the presence of, and depth to, gravel, rock, shale, hardpan or clay. The application is not very extensive. Soil borings are made by means of earth

With The County Agents

REPORT OF COUNTY AGENT
WORK IN UTAH
(Continued from last issue)

Sevier County.

W. W. Owens, County Agent.

Crop Standardization Project—Potatoes and barley have been selected for this project work. A county committeeman has been chosen for each one of these crops. The Russet Burbank potato has been selected as the county potato. Demonstration farms will be chosen and the value of rotation, selection and treatment of seed, and grading for the market, will be given special attention.

Dairy Project—The number of farmers who wish to have their cows tested is increasing beyond the ability of the agent to attend to the work. Not all the cows were tested during the month on account of shortage of coal.

The new cheese factory at Richfield expects to receive milk February 1st.

Farm Bureau—A county Farm Bureau was organized during the month with a membership of 243, which is 21 per cent of the farmers. Fourteen locals have also been organized.

Miscellaneous—Projects for the year's work have been chosen by the county Farm Bureau directors and a

county committeeman appointed for each project. The following projects have been selected: Crops Standardization; Dairying; Pastures; and Insect Control.

The Farm Bureau has divided the county into three districts for National Farm Loan Associations.

Salt Lake County.

H. J. Webb, County Agent.

Farm Management Project—No work has been done on this project this month.

Farm Bureau—The Directors of the County Farm Bureau met and selected the projects for the work for the coming season. Committees on the different lines of work were appointed.

At a meeting of the county Farm Bureau the report of the sugar beet committee was received and recommendations accepted. The farmers were advised to sign the contract for raising sugar beets offered by the sugar companies.

Sparrow Eradication Project—The Farm Bureau directors decided to carry this campaign in to every home in the county and a local committeeman was appointed for each district. Results have not yet been officially compiled, but verbal reports indicate very successful work. A public demonstration was given at the high school, and about forty sparrows were killed in a few minutes.

Cow Testing Clubs—At one of the high schools about twenty-five boys have been organized to test the cows on their own farms.

Crop Rotation Project—A questionnaire on the cost of producing a number of the leading crops such as sugar beets, corn, potatoes, wheat, oats, barley, tomatoes, alfalfa, has been sent to each local organization asking for the report of about fifteen reliable farmers. This information would be of value in planning a system of rotation for the county.

Miscellaneous—Several meetings have been held to explain the Federal Farm Loan Act and three districts have decided to form an organization. The one at Sandy has already been completed.

In connection with the Dry Farm Specialist, a plan of work and system of rotation extending over a number of years, has been outlined for a farm made up of dry and irrigated land. This includes equipment, buildings, garden, orchard, etc.

Utah County.

Clyde W. Lindsay, County Agent.

Pure-Bred Live-stock Project—The first co-operative shipment of pure-bred live-stock was so successful that interest in another shipment is being worked up. Up to the 26th of the month fifty head had been ordered with a deposit of \$8,200.

Farm Bureau Project—Special committeemen from the Farm Bureau have made a special effort to enroll all the farmers in each district during the month. Over one hundred new members have been added. The Bureau voted to receive no new members for ten months after the first of February, 1917.

Sparrow Eradication Project—One thousand copies of a circular letter containing a poison wheat formula have been distributed by the Farm Bureau and work begun on January 10th. Reports from over a hundred farmers show an average of over 200 dead sparrows for each farm. A special committeeman will see that the work on each farm is carried out, and



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results reported.

Miscellaneous—Seven meetings have been held at which the charts showing results of oat smut and potato disease control campaigns of last year were shown and discussed.

At the monthly Directors' meeting of the County Farm Bureau, the activities for the locals were suggested. For the month of January they are, Farm Loan Association, Keeping Farm Accounts, Silo Excursion, and New Members.

Three National Farm Loan Associations are now ready for business as soon as the bank is organized.

Weber County.

W. P. Thomas, County Agent.

Drainage Project—Two special meetings have been held at Plain City on this project and much interest has been aroused.

Miscellaneous—A week's school for the farmers and housekeepers was held at Ogden during the month. Considerable time was spent in arranging and advertising for this convention.

Six Farm Loan Associations have been organized and have their applications ready for filing when the bank is organized. Several other local Bureaus are at work on this question.

State Leader.

During the first visit into Millard County to assist in retaking the Farm Management survey records, the work was conducted under the following plan: By previous notice from the county agent, the farmers met in groups of ten. The record sheets upon which were copied the inventories of the previous year, were given to the farmers and an explanation made as to how the records were to be filled in. They were assisted in this by the

county agent and the State Leader, and each man's record checked as he worked on it. As soon as the first farmer completed his record, it was checked with him before he left the building. The county agent spent considerable of his time in rounding in the farmers. Forty records were taken in two days, using only forenoon and afternoon sessions. The records were rechecked at night by the agent and State Leader. The records in this same area were taken in a similar manner last year and in checking over the various areas of last year, it was found that fewer records had to be returned for correction in this area than in any other one in the State.

The organization of the Farm Bureau in Sevier County were off in fine shape. In every one of the locals, the very best men were elected to office by the farmers, and in the county organization the very best men in the county were elected to the executive committee. The 225 paid-up members represent the cream of Sevier County.

The State Leader was asked to spend a week in Millard County in assisting the executive committee and the county agent in reviving interest and membership in the County Farm Bureau. During the week twelve meetings were held at which 380 farmers were in attendance, of which 256 became paid-up members in the organization. This included the territory in one-half of the county only.

The joint meeting of county agents and County Farm Bureau Directors held at Ogden was a decided success. The Directors present unanimously expressed the opinion that they were the most valuable meetings they ever attended. The average attendance was 47, representing six county organizations. All of the county agents attended these meetings. Committee reports governing the general activities of the organization were adopted at these meetings. Three days were spent by county agents in convention at Logan, where reports were adopted covering various projects in the state.

TIME—AND ITS VALUE

What is the most valuable thing in the world? Gold? No. Diamonds and rubies? Certainly not! Character Very valuable, indeed, far better than wealth, precious stones or gold—but not the most valuable. Good Health? While good health is an absolute essential in every well-rounded life, and cannot be dispensed with in the winning of any great success, priceless when measured by its relation to human accomplishment—even this is not the most valuable thing in the world. What then can it be, transcending in value gold, jewels, character, health? What then can it be, character, health? Why, Time of these other valuable things may be earned, created, built up, developed; but without Time cannot be produced, and are valueless as possessions. Wealth may take unto itself wings, and fly away. Work, skill and patience will replace it. There are probably more magnificent gems still buried in the hidden recesses of the earth than have ever been exhumed. Diamonds and rubies lost, stolen or destroyed, may be recovered or reproduced. Character, though wrapped, strained or twisted, may be restored by sufficient thought and effort; while even good health, itself, may sometimes be recovered and rebuilt by faithful striv-

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John Deere Harvesting Machinery

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The John Deere Grain Binder has wide and high bull wheel—great power. Main frame riveted—unusually strong.

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Accurate tying mechanism.

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The John Deere Dain Mower cuts satisfactorily even after years of use.

It has only three gears, so arranged that they hold each other in mesh, even after they start to wear. No power is lost in transmission from axle to knife, the mower runs smoothly and cuts steadily.

The John Deere Sulky Rake has a lever of absolute control. The teeth can be set for transportation and to gather only clean hay, leaving trash and manure undisturbed.



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Cuts clean—cutter bar always can be kept in alignment and knives centered in the guards.

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There is a big advantage in buying implements of your home-town dealer.

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He handles a line of high-grade implements—and you can see before you buy. In the busy season, when work is pressing, he can furnish repairs promptly for the goods he sells.

If, by chance, he hasn't in stock just exactly the style of implement you want, he can give you quick service in getting it to you.

John Deere factory warehouses with immense storage rooms have been established in various sections of the country. Every John Deere dealer is conveniently located to one of these houses.

This, really, gives you two supplies of implements—the stock carried by your home-town dealer and that of the factory warehouse.

JOHN DEERE, MOLINE, ILLINOIS

ings. Time, however, once lost, is gone forever, and, neither wealth, labor, prayers, entreaties nor regrets can recover it.

Time unlike money is portioned out to the average man and woman in fair and equitable measure. Barring accidents—the unexpected vicissitudes of life—"three score and ten" years is the usual inheritance. Furthermore, it is the one thing in life which is forever ahead of us, to grasp, to spend,

to use, wisely and well if we so choose; but never behind, because once past, it is neither ours nor another's to be used again, thenceforth, useless, worthless, non-existent.

What is your attitude toward time? Do you regard it as the greatest wealth of existence. Then carefully hoard it every shining moment, and use it as it passes to purchase the maximum it will procure for you? Do you constantly strive with yourself to make

an increasingly better use of each passing hour?

Again, we repeat, are you keenly alive to the value of every moment of this supremely valuable inheritance, spending it so wisely and well that when the supply runs low, and shadows lengthen, you can welcome the approach of the very last hour, and cheerfully say: "It was a rich inheritance, and I have spent it well." —For Times.



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We guarantee every subscriber against loss thru dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

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If you want to reduce the cost of living on the farm, raise some poultry and have a good vegetable garden. Every farmer should raise everything consumed by his family that his soil and climate will produce.

Be sure and treat your seed oats for smut. You will remember the very successful work done by some of the county agents last year and the very helpful results obtained, it showed the great value of treating seed oats for smut. The cost is so small, benefits so great.

Once more we suggest to those who have not taken an inventory of their farm, to do so now, before the spring work commences. Find out which part of your work is bringing the best returns. You can only do this by knowing the cost. Take an inventory and learn the cost—it will be time well spent.

HOGS TO BE DISTRIBUTED

Several car loads of hogs will be put out among the boys and girls within the next few days by the leaders in the Boys and Girls Club work, Ogden Packing and Provision Co., the Cudahy Packing Co. and Salt Lake Union Stock Yards. This is one of the most commendable undertakings that has happened in our state for a long time. It should have the hearty co-operation of all our citizens. It has a dual work to perform. The increasing of our hog production and the teaching of our boys and girls how to grow and care for live-stock.

The arrival of a car of pigs in any community

to be distributed among the boys and girls should awaken community interest enough to hold a public meeting at which talks should be given on live-stock for it is a big boost for any town.

FEEDING DAIRY CALVES

We have often told our readers about the importance of raising the best heifer calves. Once a person is converted to such work the proper care and feeding of a calf is very important, because it means so much to the calf—the kind of a cow she will make. A calf may have the best of breeding but if she can not have the proper care and lacks the right kind of feed necessary for its proper growth and development, we do not get the best results.

Raise more calves, give them good care and proper feed and you will be well repaid for all the time, effort and money expended.

USE ONLY THE BEST

There are a number of reasons this year why only the best seed should be used. First of all it will bring the best returns, will produce more for the efforts of cost. In nearly every case a better product is produced with the best seed. This year more than ever we want to produce the largest and best crop because of the unusual conditions. It costs so much to plow, plant, cultivate, irrigate, and harvest, whether the crop is thin due to poor seed, or if the crop is a good one due to good seed. Secure your seed now, right now, and test its germinating qualities.

See that no weed seed is found among any of the seed you expect to plant. Remember that every poor seed means a loss in yield at harvest time. Do not forget that "like begets like," and use only the very best seed.

WE SHOULD MAKE THE MOST OF IT

If our farmers are reading the daily papers and are in touch with the crop conditions of the old world it seems to us that every farmer would make the most of his farming business this year.

England has sent to the United States for 2,000 tractor plows and they propose to work them night and day in order to increase the food production of their nation. Every available bit of soil will be cultivated.

This condition tells a story that every farmer should know and more than that he should act. We must produce all the food products possible. Live-stock, cereals, vegetables or any foods that are used for man or beast.

We do not want you to think that we are going to extremes on this subject but we do believe that every foot of ground should be cultivated and made to produce the best crop possible. You have every thing to gain in so doing and nothing to loose. In other words we want to see you make the most out of an unusual condition.

INCREASED INTEREST IN DRAINAGE

It is very pleasing to us and all those who have been emphasizing the value of drainage, to see the interest that is being shown in the different parts of the state in this work. It means much to our state because the land that is now practically worthless can be made productive, at a cost of from 10 to 20 dollars per acre. Usually the land is close by one of the older towns and when it is drained and again able to produce a crop will be all the more valuable because of its location.

Our laws will permit of this work to be done in a co-operative way, forming drainage districts,

selling of bonds with payments spread out over a number of years, all this to encourage the work of reclaiming thousands of acres of valuable land.

The reclaiming of these water-logged lands will bring wealth to the owners and the community and help to build up our state. The state and government have a number of men, experts in drainage, who will help you if you will only ask.

If any of our readers have any questions they want to ask, send them in. We want to help you and are in a position to do it so get busy and send in any question you have on this important problem of drainage.

HATCH YOUR CHICKENS EARLY

Fresh eggs are highest in the late fall and winter. This is because everybody's hens take their annual vacation then.

Don't blame the hens; they always have done it and they always will.

They stop laying eggs and grow a new crop of feathers instead.

During this "molting period," as poultrymen call it, nobody has many eggs to sell until the young pullets begin to lay.

American breeds (Plymouth Rocks, Wyandottes, Rhode Island Reds, etc.) begin to lay when about seven months old. Leghorns, Minorcas, etc., begin when about six months old.

Therefore: If we hatch chickens early in the spring they will begin to lay when the hens are molting.

To Produce Late Fall and Winter Eggs—

Begin hatching March 1. Hatch at intervals and have all the chicks out not later than May 1st.

If hens do not want to sit in time, get broody hens from a neighbor or use an incubator.

There never was a brighter prospect for the poultry business. Start right now and help reduce the cost of living by having a good flock of chickens on your farm.

"MORE AND BETTER LIVE-STOCK"

It is a good slogan and should be carried out in our farming this summer. The special committee appointed at the Ogden Round-Up and State Farm Bureau meetings are at work and if their suggestion carried out the live-stock industry will be given a big boost this year.

In the past there seems to have been a lack of interest between the farmers and the financial interests of the state. Now they are getting together and results will follow.

For years we have been sending our feeders to eastern markets to be fattened and made ready for the best markets, now we plan to do it all at home.

The packing plants at Ogden and Salt Lake have promised to co-operate in the work and make a market at home so that our live-stock will be killed and dressed here at home and shipped out in the form of the finished product in the place of feeders as we have done in the past.

Farmers who want to go into the feeding business, who have the feed but lack the money to buy hogs, sheep, or cattle can get what money they can use. Report your desire of going into the feeding business to the secretary of the local or county farm bureau, if you live in a county where there is no organization then write to us and we will put you in touch with the people who have this matter in charge.

Now is the time to decide what you are going to do because you must grow crops that will help you in that line of work.

DAIRYING

RIGHT DOWN GOOD BUTTER

By E. L. Vincent.

Recently I have been doing a bit of investigating on my own hook to see where butter stands on the whole, compared with the substitutes that are on the market. I was led to do this by the remark of a man who is well able to buy the butter to be had, even up to a dollar a pound, if need be but who, as a matter of fact, is using in his household a certain make of oleomargarine, pronouncing it superior to real butter.

To satisfy myself along this line, I set up to doing a thing I never did before in my life. I bought some oleomargarine. I put it alongside the butter from a number of different farms and we ate it without prejudice in the effort to find out just what is the truth about butter and its substitutes.

Let me add that we are all farmers and we know what good butter is. In this respect we have an advantage over some people, whose minds seem to be so perverted that they cannot tell the difference between good butter and bad.

The result of our experiment was very surprising. We will let it go at that, simply adding that it is my firm conviction that, as a matter of buttermaking, the farmers of this country are not living up to their privileges. They ought to make a deal better butter than they do. Among the samples we bought from different dairies, there was some as

fine goods as one would care to put in his mouth. We could see, or rather taste, that great pains had been taken from start to finish in making that butter. This is a most cheering thing; but why should not every dairy turn out equally good butter? What is the reason there is so much poor butter on the market?

It must be the answer to this is first, either that people do not know how to make choice butter, or second, that they are not willing to put the necessary thought and effort on their work. In either case the result must be disastrous. Not knowing how and not being willing are the bane of buttermaking.

Now, it is possible for every dairyman to make right down good butter if he will. Whether from ignorance or carelessness, the remedy is always near at hand. To begin with, in our day and age there is no excuse for a man or woman who will not master the fine arts of buttermaking. We have books and papers all the time telling us how to do this work. Then, too, in every community there is somebody to whom one may go for instruction, if he will just lay aside his pride or his prejudice.

In fact, the great burden comes back on the people who are not willing to study, to think, to learn, to put the very best there is in them into every part of the work they are doing. We do get in a hurry sometimes; let us admit it. Then we slight some part of the process, but as a rule there is little excuse for us if we do not do our work in the most cleanly, thorough and up-to-date manner possible.

And it always pays to do this. Do we always stop to think that we hamper our own progress by making and offering for sale butter that is not the very best we can make it? The prices we get depend in great measure on the article we offer for sale.

I would like to know that every buttermaker in this country had "passed a resolution" that from this time on he would do his level best and never be satisfied until that best is the very best possible. Why not?

SUNFLOWERS FOR SILAGE

Mr. Hillman who has charge of the cow testing association in Bitter Root Valley, Montana, gives the following report on sunflower silage:

"The sunflowers used for the silage were Mammoth Russian. They have been experimenting with some of the smaller varieties, but consider this large variety the best for the silo. These were drilled in rows twenty inches apart and irrigated. They were put in about the middle of May, but can stand a great deal of frost, so could be put in at the same time grain is sown. About fifteen pounds of seed were used to the acre. The crop was irrigated but if they were going to be raised under dry land conditions they should be put in rows thirty or thirty-six inches apart.

"It was intended to let the sunflowers get fairly well matured about the same as corn, before being put in the silo, but an early storm broke them down so that it was necessary to put them in the silo earlier. Consequently, they were still very wet,

A GUERNSEY BULL

used in a grade herd in Ohio sired daughters that produced 50% more milk and 70% more butter fat as 2 year olds than did their dams when mature.

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and considerable water ran out of the silo."

Mr. Hillman is informed that the yield this year was from thirty to forty tons per acre. Last summer they were feeding some of the silage to the cows. Those which were fed the sunflowers kept up their flow of milk as well as those which were fed

corn silage. Some of the big Holstein cows took as much as 90 pounds per day. No unfavorable results could be noticed in the flavor of the milk. While this experiment has not gone far enough to reach any definite conclusions, it indicates that sunflowers may be considered a good crop for the silo in some localities.

POULTRY

GOOSE RAISING.

Pasturage is essential to the successful raising of geese, according to the United States Department of Agriculture.

The industry is at present on the basis of small flocks raised on general farms, few, if any, farms being devoted entirely to goose raising. In some producing sections, however, the fattening of geese is conducted as a special business. For this business the geese are collected from general farms, usually over a large area, and are fattened for several weeks before being killed.

Geese can be raised in small numbers successfully and at a profit, on farms where there is low rough pasture land with a natural supply of water. Geese are generally quite free from disease and all insect pests, but occasionally are affected by the diseases common to poultry. Grass makes up the bulk of the feed for geese, and it is doubtful whether it pays to raise them unless good grass range is available. A body of water, where they can swim is considered essential during the breeding season and is a good feature during the rest of the year. The market for geese is not so general as for chickens. This should be considered in undertaking the raising of geese. The demand and the price paid for geese are usually good in sections where goose fattening is conducted on a large scale. Many geese are kept in the South for the production of feathers rather than for their flesh, but the demand for their feathers is not so good as it has been, making the business less profitable. Wherever possible, the geese on a farm should have free range. Many farmers in the South keep them to kill the weeds in the cotton fields.

Houses.

Except in winter or during stormy weather, when some protection should be provided, mature geese do not usually need a house. Some kind of shelter, such as a shed open on the south side, a poultry house, or a barn is usually provided by breeders in the North and is used by many in the South. Coops, barrels, or some other dry shelter should be provided for young goslings. The goose houses should be kept clean and plenty of clean straw provided for the floor.

Selecting and Mating.

Geese, like other kinds of poultry, should be selected for size, prolificacy, and vitality. They should be mated several months prior to the breeding season to obtain the best results; therefore breeding stock should be bought in the fall. Goose matings are not changed from year to year unless the results are unsatisfactory. A gander may be mated with from one to four geese, but pair or trio matings usually give the best results. The wild gander usually mates with only one goose. When mated, geese are allowed to run in flocks. From 4 to 25 geese may be kept on an acre of land, and under most conditions 10 is a fair average.

Incubation.

Geese are fed a ration to produce eggs during the latter part of the winter or so that the goslings will be hatched by the time there is good grass pasture. They are allowed to make nests on the floor of the house, or large boxes, barrels, or shelters are provided for that purpose. The eggs

should be collected daily and kept in a cool place where the contents will not evaporate too freely; if kept for some time they may be stored in loose bran. The first eggs are usually set under hens, while the last ones which the goose lays may be hatched either under hens or under the goose if she goes broody. If the eggs are not removed from the nest in which the goose is laying she will usually stop laying sooner than if they are taken away. Some breeders prefer to raise all the goslings under hens, as geese sometimes become difficult to manage when allowed to hatch and rear their young. Hens used for hatching goose eggs must be dusted with insect powder and have good attention, as, in the case of geese, the period of incubation is longer than in that of fowls. Goose eggs may be hatched in incubators and the goslings successfully raised in brooders, although this is not a common practice.

The period of incubation of goose eggs varies from 28 to 30 days. Moisture should be added to the eggs after the first week if set under hens or in incubators; this is usually done by sprinkling the eggs or the nest with warm water. Four to six eggs are set under a hen and 10 to 13 under a goose. They may be tested about the tenth day, and those which are infertile or contain dead germs should be removed. They hatch slowly, especially under hens, and the goslings are usually removed as soon as hatched and kept in a warm place until the process is over, when they are put back under the hen or goose. Some breeders who hatch with both geese and hens give all the goslings to the geese. Hens with goslings may be confined to the coop and the goslings allowed to range. The latter, especially if the weather is cold, are not usually allowed to go into water until they are several days old. In mild weather the hens are allowed to brood the goslings for from 7 to 10 days, when the latter are able to take care of themselves. Good-sized growing coops, with board floors, should be provided for the goslings, and they must be protected from their enemies and given some attention when on range.

Feeding The Geese and Goslings.

Geese are generally raised where they have a good grass range or pasture, as they are good grazers, and, except during the winter months, usually pick up most of their living. The pasture may be supplemented with light feeds of the common or home-grown grains or wet mash daily, the necessity and quantity of this feed depending on the pasture. Goslings do not need feed until they are 24 to 36 hours old, when they should be fed any of the mashes recommended for chickens or ducklings.

Preparation For Market.

Before marketing the young geese the average farmer can feed advantageously a fattening ration either while the geese are on grass range or confined to small yards, but it is doubtful whether it would pay him to confine them to individual or small pens and make a specialty of fattening unless he has a special market or retail trade for well-fattened stock.

Geese are usually killed and picked in the same manner as other kinds of poultry. Some markets prefer dry-picked geese, while in other markets no difference is made in the price of

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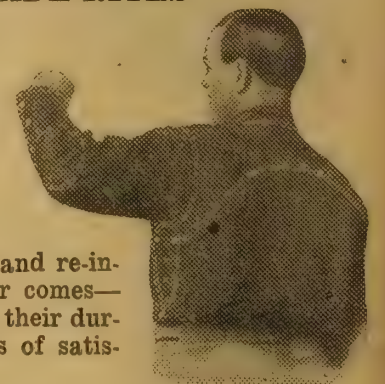


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scalded or dry-picked geese. When feathers are to be saved, fowls should not be scalded but should be picked dry before or after steaming. On most farms where geese are raised the feathers are plucked from the live fowls at some time prior to moult ing. About 1-1.10 pounds per goose is the average yield of feathers. Feathers are worth from 30 cents to \$1.00 a pound and the picking cost per goose is about 11 cents.

POULTRY POINTERS

One reason why hens are not more productive is because usually they are half fed. It is false economy to expect them to pick their living from the leavings of other stock. Many farmers admit that they feed their hens nothing during the summer. In so doing, they are saving feed but losing money.

ANSWERS YOU MAY WANT TO KNOW ABOUT THE FEDERAL FARM LOAN BOARD

Below you will find reproduced a number of the questions most commonly asked in letters coming to the Federal Farm Loan Board, together with the answers furnished by direction of the Board:

1. What constitutes an "actual farmer?"

An actual farmer is one who conducts the farm and directs its entire operation, cultivating the same with his own hands, or by means of hired labor. An owner, to borrow under the Farm Loan Act, must be responsible in every way, financially and otherwise, for the cultivation of his land.

2. What is the meaning of "equipment?"

Equipment consists of the implements needed in the conduct of a farm to facilitate in its operation. It might consist of teams as well as machinery, tools and like articles.

3. What is the meaning of "improvement?"

Anything in the form of beneficial structure, or any useful, permanent physical change tending to increase productive value, such as clearing, filling, draining, fencing, buildings, etc.

4. Has a Farm Loan Association the right to appoint an attorney to draw up abstracts and pay him out of its official funds, or should the members of the association club to either as individuals and have this done?

Each borrower is required to furnish his own abstract and the applicant must stand the expense of preparing his abstract. An association has no right to employ any of its corporate funds to pay for the preparation of abstracts for its members. This must be an individual charge, and if members of an association club together to have this work jointly done they must do it as individuals and not as an association. Each borrower is free to make his own choice in the selection of an attorney or abstractor.

5. What will be the rate of interest?

Not exceeding 6 per cent. The exact rate cannot yet be told; 1 per cent

more than the interest rate farm loan 6. May members of a partnership borrow

Yes, if one or both are farmers and engaged in the cultivation of the land mortgaged. Partners must join severally in executing the mortgage and one should give the other authority to represent him in the Farm Loan Association, as only one can have membership.

7. Will the Federal Land Banks make any charge for examination of abstracts of title?

The examination of abstracts, when furnished, will be made by the Bank's general attorney at its office, and for this examination no charge will be made. In districts where abstracts are not obtainable except by examination of the records, the borrower will have to bear the cost of such examinations.

8. When a husband and wife execute a joint mortgage should one give the other power of attorney to be the representative in the Farm Loan Association?

Both husband and wife should sign the mortgage, but the one in whose name the title stands should be the member of the Association.

9. What is the basis of appraising lands?

The appraisement of a farm should represent the best judgment of the members of the loan committee as to the value of the land in question, the principal factor being the productivity of the land when used for agricultural purposes, but taking also into consideration the salability of the land and prevailing land prices in that community.

10. What will be the size of the bond of the secretary-treasurer?

This will depend upon the size of the Association. The bond need not be large enough to cover the aggregate amount of money borrowed by the members of the Association because this money will be transmitted in such a way as never to be in the exclusive control of the secretary-treasurer. It should be large enough merely to cover the interest and amortization payments, called the instalments, as well as the deposits likely to be in the hands of the secretary-treasurer at any one time.

11. What is the judgment of the Farm Loan Board as to compensation for the Loan Committee?

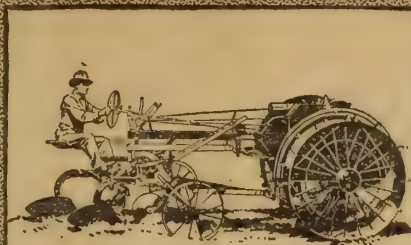
This depends so much on the size of the Association that no fixed rule can be made. Since this is a co-operative banking system, the Farm Loan Board desires that the work, as far as possible, be done without expense. The Board believes that a small association it will not be necessary to pay the Loan Committee any fees. The Board believes that in very few cases will it be necessary to pay the Loan Committee more than actual expenses.

12. What is the judgment of the Farm Loan Board as to the compensation to be paid the secretary-treasurer?

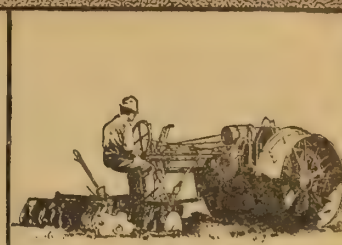
This also depends so much upon his relative duties as fixed by the size of the association that it is difficult to name an amount. This compensation should be based upon the time actually required to perform the work of the Association.

13. May one man, by owning two pieces of land, become a member of two associations and borrow in excess of \$10,000?

He may become a member of two associations, but the total amount of his loans may not exceed \$10,000.



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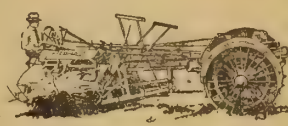
ers, Manure Spreaders, Mowers, Plows (chilled and Steel), Reapers. Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Vehicles, Wagons.



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P-2



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14. May an association operate across state lines even if both states are in the same bank district?

No, no association may designate territory in two states, in which loans can be made.

15. In a general way, what sort of abstracts will be required? Must they be prepared by bonded abstractors, or is this a matter for the judgment of the land bank officials?

It is a matter for the Federal land banks to determine. Any abstract of title sanctioned by ordinary sound business usage in the community will

be sufficient under this act. The Federal land banks will recognize any system of title registration approved by the law of the state in which the land is located.

W. W. FLANNAGAN,
Secretary of the Farm Loan Board.

A productive hen requires from 70 to 80 pounds of feed a year. If she gets only 40 to 50 pounds, she will simply satisfy her body requirements. She will not lay eggs. The scantily fed hen is a poor investment. It is only the liberally fed hen that yields the profit.

"IMPORTANT ENGINEERING AND SOIL PROBLEMS WHICH CONFRONT THE DRAINAGE ENGINEER."

(Continued from page 3)

sary that the ground-water table be lowered to a depth greater than that from which capillary will raise moisture above the free water surface, in order that soluble salts may not be accumulated on and near the ground surface due to evaporation from the surface. A study of the soil itself, in place is the best measure of this.

The location of a more-pervious or a less-pervious sub-stratum is also of importance. Referring again to the wet area at the change of slope, assume that at the location chosen for a drain line, a previous stratum exists at a depth of from 6½ to 7 feet and is underlain at the latter depth by clay. Now, if a drain is installed at a depth of 6 feet, the damaging water will continue to pass under it and the drain will not be effective. If the drain is laid at a depth of 6½ feet the situation is even worse. Not only will the water continue to pass under the drain, but the tile being bedded in the previous material will not have a stable foundation and will be likely to get off of grade, out of line, and even up-ended and filled with sand. Obviously the drain must cut through the previous stratum and bed on the underlying stable material.

In the case where the sub-stratum is of less-pervious material, the water will be found moving on top of the stratum and, here again, if the drain does not cut to the stratum, it will not be successful. No advantage will accrue, however, by cutting the drain into the stratum except so far as is required to afford good bedding.

Even if the soil is fairly homogeneous in structure, much may be learned as to the best depth to afford by a study of the sub-soil conditions.

The determination of the required capacity of drains by reference to sub-soil studies has not yet been worked out so conclusively as some of the other factors, but enough work has been done to show that close estimation by such a process is possible. Formerly design for capacity was based on rule-of-thumb procedure or much was left to the judgment of the designer. Very early the Egyptian practice of proving for a drainage run-off of one-third the irrigation supply was adopted, but experience soon showed that the drainage run-off might vary from

a small percent of the irrigation supply to several times the irrigation supply. The system of basing the probable discharge upon the length of the drain was proved equally useless.

It is quite apparent, however, that there is a definite relation between the required capacity of drains and the behavior of the ground-water table before drainage. Obviously, it is the prime purpose of drainage to remove the surplus water from the soil and to prevent fluctuations of the water table above a certain prescribed plan. It is usually obvious that a measure of the surplus water in the soil is the difference between the total void space of the soil and the capillary content. This latter may be approximated by soil-moisture studies. Then if we have a record of the fluctuations of the ground-water table we can easily determine the actual amount of water necessary to be removed to prevent the dangerous rise.

An interesting method of designing for required capacity of drains was recently developed in which no moisture-content or void-space determinations are required and where all studies are on a field scale. It is applicable only where the ground-water table is within capillary distance of the surface and where, owing to rains or recent irrigations, the moisture content is at the capillary capacity point. By measuring the rise of the ground-water table due to a measured precipitation or irrigation, the difference between the void space and the capillary content of the soil can be determined directly and this is precisely what is desired.

Up to this point we have been considering only the matter of excess of moisture in the soil. As a matter of fact, all arid soils contain a greater or less amount of soluble salts and as a rule waterlogging is followed by an accumulation of these salts to an extent that is detrimental to plant growth. Without going into a discussion of the nature of these salts or their effect on plant growth we will pass on to a consideration of their bearing on problems of design.

The accumulation of an excess of salts on and near the ground surface is the result of evaporation of moisture from the soil while the ground-water table is within capillary distance from the surface. As has been said, it is necessary to place drains deeply enough so that the ground-water table is within capillary distance of the surface. Now the capillary rise of water is both increased and expedited by the presence of soluble salts and this effect is worthy of consideration. Furthermore, if there is a great excess of salt present it will be necessary to leach out the ingredients by means of copious applications of irrigation water. This calls for a more capac-

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for all classes of live-stock. Prize stock will be sold at auction. Active competition by other local Packers as well as leading Coast Packers who will be represented for opening and thereafter.

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PORTER-WALTON CO.
SALT LAKE

ious system than the actual drainage needs demand. Moreover it is often desirable to expedite the removal of salts as much as possible, so that a minimum number of crops will be lost. This calls for a closer spacing of drains than would otherwise be required. The drainage engineer frequently has some nice problems in economics to work out.

The determination of the nature and amount of salts present in the soil may be made by analyses of soil samples during sub-surface studies. These analyses may be made by the electrolytic method or by evaporation of filtrates as far as total salts are concerned, but chemical analyses must be made in order to determine the proportions of the constituents.

Construction

From the construction standpoint,

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the most important problem is the effect of waterlogging and accumulation of salts on the soil and on vegetation. Arid soils lack humus and are generally very fluxious when saturated while the destructive effect of the

on vegetation results in a lack of which in other instances acts as a binder and provides a fairly firm surface foundation for field operations. In the case of fluxible soils great difficulties during construction are entered owing to the caving of sides of drainage trenches, and the use of horses, wagons and machinery. Cost naturally runs very high under such conditions and a system completed is not so nearly as satisfactory as might be expected.

One of the drainage engineer's problems has to do with human factors. Landowners will not install a system until the groundwater rises so that the soil is converted into

mire, salts are accumulated to a very harmful degree, vegetation is all killed out, crops are lost, the land owner up to his neck in debt and with no source of income to pay for drainage work, which under such a condition as then exists will cost from two to four times what it otherwise would. The average life of drainage engineers would be probably be increased by ten years if landowners would only drain their lands at the right time which is the moment the groundwater table gets above a safe depth, which is generally in the neighborhood of six feet from the ground surface. Lacking this, the drainage engineer must determine at what season of the year the ground-water table is the furthestest from the surface and install systems at such a period if possible.

Another problem involving human nature arises in this connection. It is highly important that no irrigation operations be carried on on or near a tract being drained, but do you know, it is always highly important that the old miry, alkaline, God-forsaken, salt-grass bog must be irrigated just exactly when it will do the most harm even if the drainage engineer can guarantee that he will make sugar-beet land out of it in six months time if let alone? Why, it would pay big if the whole farm were left to parch and burn up that season.

Special methods and devices have been developed to handle the situation where fluxible soils are involved, but time does not permit of a discussion of these. As a matter of fact, the drainage engineer must make continual modifications of these during construction, soil conditions frequently changing within a space of a few feet and sometimes being absolutely different on the two sides of a trench less than two feet in width.

The selection of machinery for trenching can be made only after a very careful study of the sub-soil conditions and frequently the whole question of success depends on the choice of machinery.

Subsequent Treatment.

The drainage engineer recognizes artificial drainage as only supplementary to natural drainage and that drainage is only a basis for reclamation of alkaline lands and not the reclamation itself. The reclamation of alkaline lands depends upon the percolation through the soil of a sufficient quantity of water to dissolve, leach out and carry to the underdrainage the accumulated salts. A portion of the dissolved salts are removed by the drainage system but a large part are merely redistributed throughout the soil column. It is quite evident, therefore, that the drains must be ever operative, otherwise a subsequently raising water table would result in a new accumulation of salts.

It has been found necessary to spread the leaching water over as large an area as possible, to keep the depth as uniform as possible and to have the subsequent drying out take place as uniformly as possible or there will be merely a translocation of salts and not a proper removal. If ridges or knolls extend above the water surface during flooding there will be an accumulation of salts on the ridges or knolls and if one area is flooded while an adjacent area remains dry and subject to evaporation, it is likely that salts will move laterally and the content of the dry area be actually increased.

The actual amount of salts removed

from soil by a leaching process is startling. As an example, a certain tract of 11 acres was recently reclaimed. Six months after the drains were installed, and as a result of a single flooding, 2000 tons of salts were removed. This is at the rate of 116,000 tons per square mile, or over 7,700 carloads per square mile.

FEDERAL FARM LOAN BANK

TO BE READY SOON AFTER

MARCH 1ST

The Federal Farm Loan Board has issued a warning to the farmers of the United States to beware of organizers who are attempting to make private profits in the application of the Farm Loan Act.

Attention of the Board has been called to the fact that in many parts of the country the organization of farm loan associations is being inspired by the desire of certain individuals to create jobs for themselves.

The Farm Loan Act provides for the payment of a small salary to the secretary-treasurer of each farm loan association, and it also permits the payment of fees to members of the appraisal committee of each farm loan association, subject to the approval of the Federal Farm Loan Board. Each borrower under the Farm Loan Act is required to provide an abstract of title, and the Board has advised that farmers constituting and association join together, as individuals, in getting one attorney or abstractor to prepare these abstracts co-operatively so as to reduce the expense to a minimum. Complaints are now being made that certain individuals are organizing farm loan associations to get themselves elected secretary-treasurer at excessive salaries; that borrowers are being unnecessarily taxed for the payment of the appraisal committee and that in some instances attorneys and abstractors are using the System with a view of creating business for themselves.

The farm loan Board is urging farmers to organize small units where practically all of the work can be done gratis by members of the association and thus maintain the purely co-operative character of this farm loan system.

It warns that any association which gives evidence of having been organized for purposes of private profit will be given very careful scrutiny before a charter is granted.

The sale of stock in the twelve Federal land banks is now completed. The law required that the stock of each of these twelve Federal land banks should remain on sale for thirty days and at the end of that time the Government should purchase all of the remaining unsold stock. This thirty day period ended with the close of business February 9th, and the Secretary of the Treasury, acting for the United States Government, will purchase the unsold part of the \$9,000,000 capital stock of these twelve banks.

The Federal Farm Loan Board expects, within the next few days, to announce the directors of these twelve Federal land banks so that the banks may organize before March 1st. Shortly thereafter these banks will be ready to issue charters to applying farm loan associations and then proceed with the business of lending money on first mortgages secured by farm lands.

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Light draft, automatic control and perfect Removable dust proof wheel boxes with new caps. Beams are high in the throat, sole clearance in deep plowing. Double bottom steady and rigid, making it run absolutely level and leaving a smooth, level furrow bottom. Truly automatic rear wheel control ever holds rear wheel rigid regardless of caving of team, but allows it to castor in the turn, making a square turn possible.

and lynch pins inside the screw caps take off of boxes. Bottoms so hung in frame by weight of plow, dirt and driver all ensuring light draft. Spring washers prevent working loose. High grade coulters and cone take-up bearings, and quickly change lamps.

foot lift. Hitch adjustable without ropes or pins. Bottoms are built on double steel frogs, the strongest made; strong where steel frogs are weak. Different P & O bottoms interchangeable. P & O plows have every convenience and add to the performance of perfect plowing.

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HOME

WHY BABIES WAKE AT NIGHT

Dr. Lena K. Sadler.

Babies, especially new-born babies, need four things—warmth, food, water and sleep. While the babies sleep they are not to be disturbed by the fond mother's caresses and cuddling—feeling of the tiny hands, smoothing out the soft cheek, or stroking its silky hair—for all such mothers are truly sowing for future trouble. Let baby absolutely alone while sleeping, and let this rule be maintained even if an important guest must be disappointed. The wise mother cat never disturbs her sleeping kittens.

Sleeping, eating and growing should occupy the whole time of young babies. Until they are 2 months old they need from eighteen to twenty hours sleep out of each twenty-four; and not less than sixteen hours up to the end of the first year.

At six months baby should sleep through the night from 6 in the evening until 6 in the morning, with a 10 o'clock feed, which should be given quietly, in a darkened room.

At 2 or 3 years of age twelve to fourteen hours of sleep are required; while at 4 to 5 years eleven to twelve hours are needed; when they attain the age of 13 years they should still have ten hours of unbroken sleep each night.

Need Separate Bed

Baby should have a separate bed. The temptation to nurse him on the least provocation, as well as the danger of overlying, are reasons enough for such an arrangement.

At 5:30 in the afternoon baby should be undressed, rubbed or bathed, made comfortable and fed; then, my mother reader, he should be laid down in his little bed and allowed to go to sleep, without any

coaxing, singing, rocking, or even holding his hand. Babies will go to sleep by themselves if you do not begin the wrong habit of rocking them to sleep. You should not even habitually sit in the room or hold their tiny hands.

There will come a time when you greatly desire to do something else. You have many urgent duties awaiting you, and, baby not being old enough to understand the circumstances, begins to wail out his feeling of neglect and abuse. It is nothing short of wicked thus to spoil a child.

The notion that the household must move about on tiptoes is not only unnecessary but ridiculous. From the hour of his birth let the child become accustomed to the ordinary noises of the home. If this plan is started early he will prove a blessing and a ray of sunshine to the family and not an autocrat, to whom all must bow and bend the knee.

After five months, if a healthy baby awakens between 10 p. m. and 6 a. m., warm unsweetened water may be given from a bottle. He soon decides that warm water isn't worth crying for, and he soon acquires the habit of sleeping through the night.

1. **Lack of Fresh Air**—Babies cannot sleep peacefully in a hot, stuffy room, or in a room filled with the fumes of an oil lamp turned low. A crying, fretful baby often quiets down as if by magic, providing he is not hungry and the diaper is dry, when taken into a cool room with fresh air.

2. **Clothes and Bedding**—If baby's neck is warm and moist you may know that he is too warm. If the diaper is wet it should be changed at once. One of the worst habits a baby can possibly get into is to become so accustomed to a wet diaper that it does not annoy him.

3. **The Food**—Too little, too much, or the wrong kind of food will disturb baby's sleep. Many mothers who sleep near their babies nurse them every time they wake up, and this soon becomes one of the biggest causes of disturbed sleep.

4. **Spoiling**—A lighted nursery or bedroom, rocking to sleep, jolting the carriage over a door sill or up and down, the habit of picking baby up the moment he cries, late romps—any and all of these may disturb sleep, as well as unsettle the tender nervous system of the child, thus laying the foundation for future nervousness, neurasthenia, and possibly hysteria.

5. **Reflex Causes**—Wakefulness is sometimes due to reflex nervous causes such as the need for circumcision, or the presence of adenoids, enlarged tonsils, or worms. If baby has to breathe through his mouth then you may suspect adenoids.

POTATOES AS FOOD

General use of potatoes in the family diet is based on sound economic and dietetic reasons.

From the point of view of dietetics, potatoes furnish starch in one readily digestible form, contain mineral substances of importance to the body, and tend to make tissues and fluids of the body alkaline, thus counteracting the tendency of meats, eggs, fish, and like foods to create acid conditions. Since the body does its work best when its condition is either neutral or slightly alkaline, potatoes perform an important function in the body besides furnishing energy producing material.

Greater care should be exercised in



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Ghirardelli's Ground Chocolate

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eling potatoes,—not only because
ring too deep is wasteful but be-
se soluble mineral salts found in
e potato are present in the material
ar the skin.

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THE FARM

ank Should Be Buried at Least
wenty Feet From Nearest Building.
The best and safest way to care
r gasoline on the farm is to bury a
nk of a capacity to meet your needs,
a depth of from 18 inches to two
et. Then put in two pipes through
e top. One pipe should run to the
ottom, or nearly so; if run to the bot-
om several holes may be drilled near
e bottom of the pipe, say one-fourth
ch from the bottom. It is good
actice to solder pipe to both top and
ottom for stability. Also put in a
nall pipe with cock for vent.

The other pipe simply goes through
e top of the tank for a filler pipe,
d should be long enough to come
ove the ground and allow for a cap
id lock if desired, and should not be
naller than one and a quarter inches,
rger is better.

Bury the tank at least 20 feet from
e garage or any building, then pipe
to garage or shop and get an ordi-
ry suction pump on end of pipe,
ing a measure or bucket for filling
r or engine.

Another very good way to get gas-
ne out of the tank is to make the
p air tight and run a small pipe
om garage through the top of the
ak with an ordinary tire valve s ld-

ered in the end, then use a tire pump
and pump air into the tank, forcing
the gasoline out.

But with this latter way, care
should be used not to put too much
pressure on tank and to release the
pressure when the gasoline has been
drawn.

A very good way to arrange so you
won't forget to let the air out is not
to have valve cock in and when you
disconnect the air pump, the air will
escape.

Of course, if you are far enough out
that the oil company will not deliver
the gasoline to you, you will need a
second barrel for filling, into which
you can put the filling pipe and use
a short pipe for connections between
this one and storage tank so you can
drain into storage tank without tak-
ing from the wagon.—R. A. Bradley,
Colorado A. C.

AMERICANS ARE WASTEFUL

Senator McCumber of North Dakota
spoke the exact truth when he stated
in the course of a speech in the sen-
ate that the high cost of living in the
United tates is largely due to Ameri-
can extravagance. Our habits have
been formed during a period of de-
velopment when towns grew up in a
night and land purchased for a few
cents an acre became worth all the
way from \$10 to \$100 upon the advent
of a railroad. In the middle west and
Missouri river states such enormous
crops were grown at times that wheat
become a drug on the market and it
was hardly worth while to haul corn
to town. Cattle and hogs were so low
in price that there was little or no
profit in raising them. Consequently
there was waste all along the line so
far as foodstuffs were concerned.

Now a great wave of prosperity has
struck the United States and prices
have risen until there has been an
angry protest from one end of the
country to the other and there are
charges of conspiracy on every hand.
The real truth of the matter is that
we are just as wasteful of our food
products now as we were in the days
when corn sold for 12½ cents per
bushel. The American people want
the best food in the market and they
will have it if supplied with cash or
credit.

Our extravagance does not consist
entirely of our taste for liquor and
tobacco or our habit of visiting places
of amusement and buying auto
mobiles. We are wasteful and extra-
vagant in every direction, and prob-
ably will continue so until the coun-
try increases in population to such an
extent that "scratching a living" will
be vastly more difficult than it has
been in the past or is at the present
time.

One thing may be said of the people
of the United States. They get a
great deal out of life as they go along,
and do not die in debt to their
stomachs if they can help it. It is
all wrong to be wasteful and
extravagant, but so long as we are run-
ning under high pressure there is no
use preaching economy and it may
be truthfully said that we are infin-
itely better off than the people of
many other countries who are frugal
and saving, who do not eat, drink
and be merry, and who view most of
the pleasures of life as born of the
evil one; and we notice that people
from all over the world who reach
our shores soon adopt our habits.

We do not excuse wanton waste or
riotous extravagance, but it would be
a grim and forbidding old planet if



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VALLEY. TILE DRAINED land is best because—

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Company**
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brain
or
muscle



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is

refreshing

"Cocoa contains

more

nourishment

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beef."



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Machinists, Salesmen, Battery and Ignition Specialists,
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on coast. We help students earn living. Write for illustrat-
ed catalog U and free \$40.00 Special Ignition Course TODAY.

NATIONAL SCHOOL OF ENGINEERING - Los Angeles, Cal.

every man of us should scrub along
as cheaply as possible and save all
our pennies. We might be laying up
treasures in heaven, but we would
make the earth not much more de-
sirable as a place of residence than
perdition itself.

We should hate to be so close that
we would not patronize the "movies"
We like to preach economy and point
out our national faults. Almost
everybody is built that way, but when

it comes to practicing what we
preach, very few of us make anything
like a commendable showing. It isn't
in us. Still, we agree with Senator
McCumber that the American people
are too extravagant, although we are
certain he is tarred with the same
stick as the rest of us—Salt Lake
Tribune.

Send in your order for Butter
Wrappers today.

LIVE STOCK

WARNING TO CATTLE OWNERS

Feed the Breeding Cows from Now Until Spring—Heavy Losses in Breeding Cattle Will Occur on Ranges Unless Feeding is Begun at Once.

The present winter has been a very severe one in many parts of the country, with the result that cattle—and especially range cattle—are getting much thinner than usual for this time of the year. In many parts of the South and West the cattle are required to make their living from the range and the old stalk fields. Quite a few farmers and ranchmen are reporting the loss of some cattle, especially young cattle and cows, from emaciation, or from starvation and exposure.

Many cows which are suckling calves or which will calve in the next two or three months are becoming weak from lack of nutritive feed and from exposure. These are valuable cattle, valuable not alone for themselves, but for the calf which each should raise this year. It is utterly folly for these cows to be neglected for the short time until grass comes. Most of them can be saved at a small expense if they are given immediate attention and feed. Pregnant cows are not usually as strong as they look, and many of them become too weak to withstand the rigors of exposure, lack of feed and calving during the month of March.

On the small farms where the cattle can easily be gotten up they should be given some good roughage such as hay or silage, or be fed a combination of them or a ration of straw and hay or silage supplemented with a small

amount of cottonseed meal or cake daily.

For cattle on the range in the West, a daily ration of 2 to 2½ pounds of cottonseed cake per head for the next 45 days will enable most of the cows to come through the winter in thrifty condition. In other words, 110 to 125 pounds of cottonseed cake or some other feed of a similar kind, worth from \$2.25 to \$3.00, will save the loss of many thin cows which are worth from \$25 to \$60 per head.

The thin cows should be rounded up immediately and put on better range and given some supplementary feeds, before heavy losses occur. The loss of one cow will frequently equal the cost of feeding almost a car load of cows for the short period until grass comes. In addition, the cows which are given feed from now until grass comes will produce strong calves and give enough milk to produce a growthy calf, whereas many of the cows which are forced to subsist on range alone will produce small calves which will become stunted in early life.

Co-operative experiments being conducted by the Bureau of Animal Industry indicate that even though good feeds such as silage and hay are available for winter feeding to stock cattle, it is usually advisable and economical to use one pound of cottonseed meal per head per day with the ration. The cattle which are fed meal winter better and more economically because the meal replaces an amount of roughage which is worth more than the meal costs.

Demonstrations being conducted in some of the Southern States indicate that cattle, and especially calves, which are being fed one pound of cot-

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

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We have just secured the listings of several farms in the Bear River valley from people who are living the east and also in California which we can sell on very easy terms, the price being far below their actual value.

We have one farm, all under cultivation a good portion of it in alfalfa; two county roads, right on railroad. Price \$115 per acre terms—¼ down, long time on balance.

190 acres in Cache valley, 100 acres dry farm wheat, 50 acres of irrigated land, for the low price \$30 per acre.

50 acres in southern Idaho, right near Oregon Short Line railroad. Home, good barn. Near where they expect to build the sugar factory. \$80 per acre. Ten years to pay.

We have twenty acres of land on South, just off State street we can sell for \$450 an acre. can have one or more acres most any payment down and time on the balance at 6 per cent interest.

We have on our lists this spring a \$200,000 worth of farm land in different parts of Idaho, Utah and Nevada. We can furnish with from one acre to as many acres as you desire. Can you good terms and guaranteed price will be right. If you are serious of securing farm land in touch with us.

We exchange farms for Salt Lake homes.

KIMBALL & RICHARDS
"Land Merchants."
56-58 Main Street, Salt Lake City, Utah
Phone Was. 963.

625 Acre Stock Ranch in Summit County. Good 8-room house, barns, and dairy houses for cows, milk house and separate milk sheds, good implements, wagons, buggies, etc. 100 good cattle, 2 good teams, harnesses, 20 head hogs, and did range land adjoining. to grade and high school one of the best markets in State (Park City) \$31,000—terms.

8 acres choice truck garden land Lehi. Good water right. the place for cucumbers, tomatoes. Only \$2,000, arranged.

RUSSELL INSURANCE COMPANY
206 Kearns Bldg. Salt Lake City

When you answer advertisements mention the Utah Farmer.

They should be dipped after the er has become warm or just shearing. Dipping kills the external parasites, puts the skin in a better condition and aids in producing luxuriant growth of wool.

Auction Sale of IRRIGATED FARMS

Under Order of Court of Feb. 5, 1917.

An exceptional opportunity to secure some of the best irrigated farm lands in Utah at a fraction of their actual value.

A Receiver's Auction Sale of the rich Irrigated Lands, hotel and other buildings, Canal system and other property of the MOSIDA FRUIT LANDS CO. will be held at 10 a. m. on Monday, March 19, 1917, on the north steps of the hotel at MOSIDA, UTAH, COUNTY UTAH.

The Mosida Fruit Lands Co. was in financial difficulties and a receiver was appointed by the District Court of Salt Lake County, and this sale is ordered by the Court to raise funds to meet its obligations.

Here's your chance to get a good improved and irrigated farm at from \$40 to \$60 per acre. The location is ideal, near the west shore of beautiful Utah Lake. Adjoining lands were sold at \$100, \$150, and \$200 and acre. It will be offered in units of 40 acres, but you can buy any number of acres.

Opportunities like this are rare. Don't miss it. Come and bid.

For full particulars see Legal Notice in Thursday's Deseret Semi-Weekly News or write AT ONCE to

H. C. ALLEN, Receiver

1401 Walker Bank Building.

Salt Lake City.

tonseed meal per day in addition to farm-grown roughage are wintering much more satisfactorily than those which are receiving the roughage alone.

The farmer who has thin cattle at this time cannot do any more important work than get them up immediately and begin feeding them sufficiently to avoid losses, and as soon as warm weather comes to dip them to kill lice and other parasites before putting them on pasture.

CARE OF SHEEP

At weaning time the ewes should be given some dry feed that will decrease the flow of milk. The udders should be watched closely and milked out if necessary.

The weaned lambs should be put on fresh nutritious pasture with some grain. Separate the ewes and lambs so they will not be disturbed by the bleating. The lambs should not be allowed to lose weight but be handled so they will keep on growing.

"Success in sheep husbandry depends on the man. Every farm should have a small flock of sheep, the size depending on the conditions. If the sheep receive proper care they will prove a valuable source of income."

The health of the sheep must be guarded in summer as well as in other seasons. Fresh water and shade are essential. Where natural shade is not available, a few old poles and boards put together answer the purpose. Sheep should not be exposed to cold, driving rains just after shearing as pneumonia is likely to result.

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

Gem Herd of Improved Chester White Swine

This Herd Bred, Raised and Sold. Both Boar and Sow Grand Champions of the World's Fair held at Frisco this last year. Both Sire and Dam, is still in the herd. If such breeding interests you, write for illustrated catalogue. Stock of all ages for sale at all times.

Address

GEO. H. LAWSHE

Falls City

Idaho

Baby Chicks

From healthy, vigorous, prolific stock—Reds, Minorcas, Barred Rock, White Leghorn, Brown Leghorn. Now booking orders for spring delivery. Prices consistent with quality.

ARCADY PLACE HENNERY

A. T. Smurthwaite, Manager.
Wellsville, Utah.

FOR SALE—A few Brown Leghorn Cockerels from bred-to-lay strains—hens that are making good right now.—David Stratton, Provo, Utah.

FOR SALE

First class Registered Holsteins Bulls, ranging in age from two months to one year. Highest class breeding. Farmers' Prices. STATE INDUSTRIAL SCHOOL Box 41, Ogden, Utah.

BABY CHICKS

S. C. W. Leghorn chicks from real profitable egg producers. Our chicks are vigorous and will thrive because our stock are healthy and because no pullets' eggs are used for hatching. Our hens lay all winter. Send for booklet.

MOUND VIEW FARM
R. D. No. 2 Brigham, Utah.

4 BEST 4 EGGS 4 BEAUTY

Rose Comb Bred for Eggs and Standard Requirements, a choice lot of Males and Females to sell on approval. Eggs guaranteed to Hatch or replaced free of charge. Write E. C. BLANPIED Box 29 Milford, Utah

FREE FOR SIX MONTHS—My special offer to introduce my magazine, "Investing for Profit." It is worth \$10 a copy to any one who has not acquired sufficient money to provide necessities and comforts for self and loved ones. It shows how to become richer quickly and honestly. Investing for Profit is the only progressive financial journal and has the largest circulation in America. It shows how \$100 grows to \$2,200; write now and I'll send it six months free. R. L. Barber, 521-25 W. Jackson Boulevard, Chicago.

FOR SALE
Poland China Hogs for sale. Both Sexes with papers.
A. C. ANDERSON
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—SEEDS—

Maize, Kaffir, Cane, Millet, Sudan, Oats, Barley, Speltz, Alfalfa, Sweet Clover and all other seeds. Quality guaranteed.

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Plainview Texas

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We are now booking orders for Spring Delivery in White Leghorns, Brown Leghorns, R. I. Reds, Barred Rocks and Black Minorcas. Anconas also.

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Orland, Glenn Co., California.

Registered Stallions

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One Black, coming three year old Station. One Grey, coming three year old Station. One Brown, coming two year old Station. Four Black, coming two year old Station.

All registered in the Percheron Society of America Stud Book.

All strictly first-class Stations.

Will be sold at a very reasonable price considering the quality.

All stock home raised.

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LEG BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

BUTTER WRAPPERS

We carry a large stock of the Best Vegetable Parchment Butter Wrappers and Especially Prepared Ink for Printing the same. We furnish them Postage Prepaid at the following prices, money to accompany order:

100.....	.90
200.....	1.25
500.....	2.25
1000.....	3.00

Send all orders to

THE UTAH FARMER
LEHI, UTAH

Duroc Jersey Boars

Boars chuck full of Grand Champion Breeding. Bred the same way as our Utah State Fair Winners. We have a great lot of top spring Boars and are offering them at bargain prices. Every Boar guaranteed to please or money refunded. Write us today.

RICHARDS LIVE STOCK CO.
Virginia Idaho
The West's Best Durocs.

FOR SALE

S. C. White Leghorn eggs and baby chicks from the choicest imported stock obtainable. Eggs \$1.50 per 15, \$3.75 per 50 and \$6.00 per hundred. Chicks double the price of eggs.

Satisfaction or Your Money Back.

EDWIN BRICKERT

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RAG APPLE KORNDYKE 13TH

BULLS FOR SALE

From A R O dams which we are offering at reasonable prices, write us.

NELSON BROS.

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FOR SALE—HOLSTEIN BULL

One registered Holstein Bull, two years old, also Bull Calf, six weeks old. Both mostly white. They are from fine stock. Call or write.

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PATENTS. Picture of Patent Office 3-year calendar & 64 p. book Free. Fitz Gerald Co., Patent Attorneys 885 F. St., Washington, D. C. Estab. 1880.

\$1,000 Profit Per Acre

Growing The Alton Improved Red Raspberry.

Doesn't winter kill, hardiest of all, the most productive of any raspberry known. It commences to ripen its enormous crop the 1st of July, and continues to bear heavily during July, August and September. Enormous size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the old common sorts as the self binder is ahead of the old reaper-hook. One acre is worth more than thirty acres in corn plants. Sold with a three years guarantee, money back if not as represented. If desired I will let you have them on one, two, or three years time. Let me help you get started in this pleasant and profitable business. This berry is very highly recommended by Prof. Robert H. Stewart, County Agricultural Agent, also by many others. Only a limited number of plants left. Write me for free pamphlet, telling all about this wonderful berry, a postal will do. Be quick before they are all sold.

H. A. PINEGAR,
Wellington, Utah.

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CATTLE RANCH

480 acres, close to free range, joining small town with store, school, urch, etc. 30 cattle, 12 horses, all machinery. A good buy for \$13,000 mplete.

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NORTHERN HOTEL CO., PROP.

FRANK L. CRAMPTON, MGR.

RATES \$1.00 PER DAY AND UP.

AMORTIZATION — HOW LOANS UNDER THE FARM LOAN ACT ARE DESIGNED TO BE HELPFUL TO THE BORROWER.

By Frank R. Wilson, Federal Farm Loan Bureau,

It has always been recognized that the most effective aid one can get is that which enables him to help himself.

Some critics of the Federal Farm Loan Act have charged that this Act makes it too easy for farmers to get into debt, and that there will be a tendency to over borrow.

A careful reading of the bill will show that this objection is met by very carefully limiting the use to which the borrowed money may be put and by the requirement that farmers gradually each year must reduce their indebtedness.

The Farm Loan Act was designed to be helpful to the farmer of average operations who has heretofore been denied adequate credit. It wisely limits the loans to 50 per cent of the appraised value of the security, because this limitation makes the security of a high character, thus satisfying the investor, and therefore results in a lower rate of interest.

The use of the money is carefully limited to the purchase of land, to pay off existing indebtedness, to purchase live-stock, or to make any productive improvement such as fencing, drainage, buildings and machinery.

When money can be borrowed cheaply for productive use, a mortgage becomes an investment rather than a handicap. The farmer is enabled to get money to put his land to better use, so that the profits of his investment will pay off his indebtedness. Hereafter judicious borrowing on the part of the farmer will be regarded as business enterprise, just as it is now considered beneficial for large commercial institutions to borrow.

The Farm Loan Act creates a form of indebtedness which peculiarly fits the farmers' needs. It recognizes that the farming business is one of slow returns.

So, it provides that a mortgage made under the Act shall be paid on the amortization or installment plan through a long or short period of years. The mortgages may be made to run from five to forty years, at the option of the borrower, and they must be paid off, interest and principal, in equal installments through the period of the loans. Permission is given to pay all of the loan or any part of it on any interest-paying date after it has run five years.

To give the prospective borrower an exact idea of the size of the payments required annually to wipe out a mortgage in a given period, amortization tables have been prepared. The following table shows the amount of annual payments required to extinguish, in the period indicated, a thousand dollar loan bearing interest at five, five and a half, and six per cent.

Term Years	Rate of interest.	
	5 per cent	6 per cent.
10.....	\$129.50	\$135.87
15.....	96.34	102.96
20.....	80.24	87.18
25.....	70.95	78.23
30.....	65.05	72.65
35.....	61.07	68.97
40.....	58.28	66.46

So it will be seen that the Farm Loan Act, in addition to providing a way for the farmer to borrow to the limit of safety, provides that he must put his borrowed money to productive uses, and furnishes the machin-

ery to get him out of debt in an honorable and businesslike way. The Farm Loan Act helps the farmer by placing within his grasp the means to help himself. It makes for business initiative and independence.

VALUE OF SHEEP ON THE FARM. (Continued from page 1)

Where the lands are well fenced—sheep proof—in the West, a small band of sheep will clean up the farm, thrive in so doing, and make salable mutton or wool on forage and roughage that would otherwise go to waste. Each ewe of such a band should annually produce a lamb worth \$3.50 to \$5.00, and from \$1.50 to \$2.00 worth of wool.

The handling of pure bred flocks, for producing rams suitable for range use, has already been taken up in some parts of the state.

With the exception of increased cost of foundation stock and therefore increased interests on investment to be taken into consideration, such flocks can be handled with but little more expense than grades. Pure bred rams produced by such a system of

sheep husbandry when old enough for breeding sell to range flock masters for \$16 to \$25.

One sheepman who has established a reputation for producing rams for range use, has contracted his ram lambs for five years ahead at \$25 per head.

It would pay western farmers to give sheep some consideration for either of the above mentioned purposes.

IRRIGATORS' QUERIES ANSWERED

O. W. Isrealson, U. A. C.

Does one crop of Alfalfa require more water than what can be stored in the soil?

This question must be answered in a manner very similar to that discussed in the last issue of the Farmer. It is likely that under ordinary Utah conditions, one crop of alfalfa can be matured on about four or five inches of water. Whether or not this quantity can be stored in the soil is dependent entirely upon the type and depth of soil; that is, a loam soil having a depth of at least six feet will undoubtedly absorb and retain four

or five inches of water which may be used by the alfalfa crop. However, this cannot be done on a light, sandy, or gravelly soil; nor can it be done on a loam soil which is only one or two feet in depth.

A CHEAP MEAL

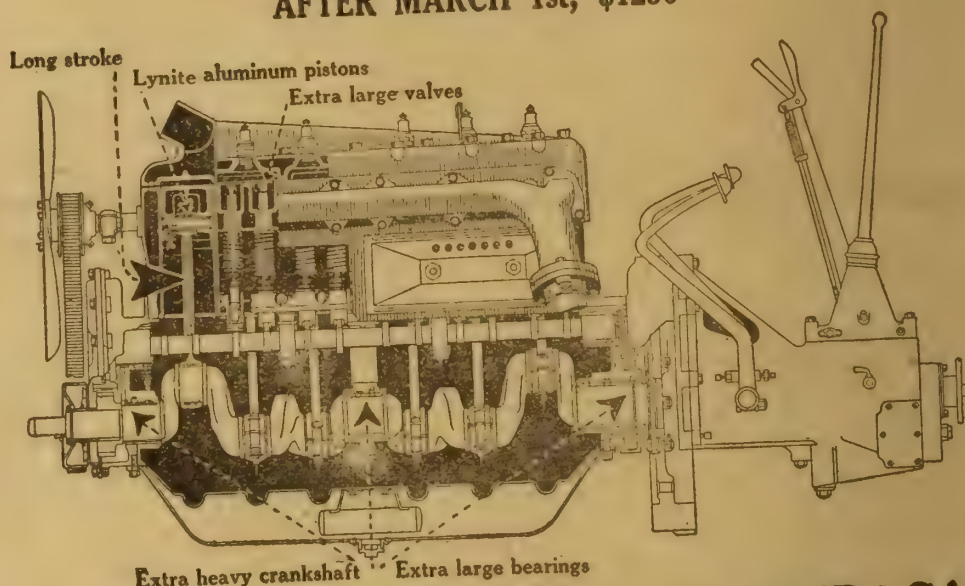
Did you know a dainty and substantial meal could be had in these days of the High Cost of Living for 7.3 cents per person?

That sounds low, but it's what a Woman's Club was able to do for 3 persons recently. And here's the menu of the meal they served:

Chicken Patties Mashed Potatoes
Bread and Butter Sandwiches
Apple and Banana Salad
Apricot Fluff Wafers Tea

Farmers should keep dry ground feed, such as a mixture of bran, shorts and corn meal, in hoppers before the hens at all times. Either sour milk or butter milk should be given as a drink. Crushed limestone or oyster shell should be before the hens at the time, and the hens should go to roost with full crops.

5-PASSENGER 6-30 CHALMERS, \$1090 AFTER MARCH 1st, \$1250



A SOUND ENGINE IN A SOUND CAR

The engine of the Chalmers 6-30 is very rugged. Yet simple. Modern in everything, but not extreme in any. A good, safe engine. Reliable. Well lubricated. Of good bearings. Accessible. And one that "stays put." Has plenty of power. Though it is not a big engine. The power is well proportioned to the weight of the car. Thus making hills easy going. The power is smooth, too.

Specifications

Engine—6 cylinders, bore 3¼ ins., stroke 4½ ins., piston displacement 224 cu. ins. Power—45 h.p. (on the brake test.) Starter—Westinghouse 2 unit. Carburetor—Stromberg, horizontal, hot air heated. Clutch—Dry disc, asbestos on steel. Fuel feed—Stewart-Warner vacuum system. Ignition—Remy distributor, Willard 80 ampere hour battery. Tires—32 x 4, chain tread on rear. Wheelbase—115 ins.

Present Prices

Five-passenger Touring, \$1090 f.o.b. Detroit	Seven-passenger Sedan, \$1850 f.o.b. Detroit
Seven " " 1350 " "	Seven " Limousine, 2500 " "
Three " Roadster 1070 " "	Seven " Town Car, 2550 " "



UTAH FARMER

THE

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 31

LEHI AND SALT LAKE CITY, UTAH

MARCH 3, 1917

Spring Preparation of Beet Land

By Mark Austin, General Agriculturalist of Utah-Idaho Sugar Company.

(So many inquires have come to us for extra copies of our issue containing this article that we have decided to reprint it in full, Ed).

Harrowing Beneficial.

Owing to the severe frosts early in fall, very little fall plowing was done on beet lands in either Utah or Idaho. In view of this I am making a few suggestions relative to spring preparation, which I am confident will prove beneficial if properly followed. During the last four or five years beet growers have demonstrated that more tonnage can be grown on heavy lands by the following surface preparation than by spring plowing, because where heavy land is spring plowed the soil is quite cold and somewhat soggy, and it is very difficult to get a fine surface or seed bed; and before the soil gets sufficiently warm to sprout the seed it has dried out. Then, if a heavy storm comes shortly after the seed is planted and before it has up, on heavy soils spring plowed, it will be likely to form a crust over the seed so that it cannot get through, thus injuring the stand very materially. While with surface preparation this is not likely to occur.

Therefore, I would like to suggest that where farmers have heavy soil which they expect to plant to beets they use the following method:

First, take a fine tooth harrow, ride it and running it as deep as possible; following with a float thus making a fine mulch on top and preparing the land from crusting. Then take a spring tooth harrow six foot wide providing the farmer has one. Pull four horses on it, running in the same way as the rows will run as deep as possible, at least three or four inches.

If the farmer has not a spring tooth harrow it would pay him to get one or two or three smaller farmers might pool together and purchase one.

Next, follow immediately behind the spring tooth harrow with a fine tooth harrow so as to keep the land bedded down to retain the moisture, and not allowing any clods to form.

This surface preparation of the soil is recommended only to land that was planted to beets or potatoes last year. The soil should then be worked in the same method crosswise, running the spring tooth harrow an inch or deeper if possible. Then go over again with a roller or land leveler to get the surface firm enough for planting.

Just before planting the land should be harrowed with a fine tooth harrow crosswise, or in the opposite direction to which the beets are to be planted.

If the land has been used to feed sheep on, and there is any straw on the surface it should be removed first,



leaving only the manure. If the soil has been manured with long manure it will be necessary to spring plow it to obtain good results. Where the soil has been top dressed with fine manure, the surface preparation as above outlined will be preferable on heavy or reasonably heavy soils. Of course, light, sandy soil may be successfully spring plowed and prepared for beets.

It has been thoroughly demonstrated that heavy soils, thoroughly surface prepared, have yielded two to three tons more to the acre than with either fall or spring plowing. We have tested this method thoroughly for four or five years, plowing one-half of a field in the fall and preparing the other half in the spring as outlined above, and know whereof we speak. Now that beets are worth \$7.00 per ton farmers will readily see the advantage of surface preparation of heavy soils. There is also quite a saving in labor, it makes it possible for the farmer to prepare his soil more quickly.

(Continued on page 13)

What to Expect of Utah As a Livestock Center

By Dr. W. E. Carroll, Utah Agricultural College.

To people interested in a permanent and lasting system of Agriculture and prosperity in general, the livestock question is of immediate interest. A study of the great nations of the world shows that in their pursuit of greatness they have found time to

produce, with considerable profit to her people, many times the number of live-stock now raised there.

Our State is peculiarly adapted to raising live-stock of various classes. The mountain sides and plateaus supply during the summer an abundance of nutritious feed available in a climate of ideal temperature, while the winters may be spent in the lower valleys and basins where the climate is less rigorous.

Our climate is less extreme than is found in a great many sections and the great amount of sunshine makes many troublesome diseases less to be feared here than under damper and duller conditions.

The water and soil of the State are of a nature that promote the health and vitality of animals and contribute to the growth of a large and vigorous boney framework and muscular system.

Soil and climatic conditions here are ideal for the production of the best kinds and largest amounts of cattle feeds. For almost all classes of live-stock no roughage can equal alfalfa. This grows abundantly and is a cheap source of protein, a nutrient so necessary to growth and production. Practically all the small grains grow well. Even corn can be profitably grown and fed in most sections of the State. Rape, vetch, clover, timothy, oats and peas, roots, and in fact all ordinary farm crops yield heavily. Government statistics report higher average yields per acre for most crops in Utah than in practically all other States.

Where irrigation is possible more summer forage can be grown per acre, thus making soiling possible on the most intensive scale. A succession of crops can be grown on the same soil without fear of failure from drouth. Pasture, too, can be made to produce more by irrigation than in sections where rainfall alone is depended upon. In the East "short" pastures the latter part of the summer and fall are the rule and cause heavy losses in the shrinkage of the milk flow and in the small gains made by meat animals. These conditions may be prevented with us by irrigating our pastures, thus keeping them growing all through the season. The growing recognition accorded Salt Lake City as a commercial center, and the recent advance made in the Stock Yards and packing industries at both Salt Lake City and

(Continued on page 5)

SEEDS

Purity Brand

BEST BY TEST

Send Today For Our Big
FREE Catalog.

Vogeler Seed Co.

Salt Lake City, Utah.

Using Sugar

When housewives use sugar that is made in the west, such as Table and Preserving Sugar, they are securing a product that is not only 100 per cent pure but which also contains 98 per cent of energy when consumed as food—a body builder, a strength builder and an energy builder.

YOU NEED THIS FOOD

Are You Eager to Succeed?

Every normal person is.

Many fail because they are not doing the kind of work for which are suited. Are you in this class? Dr. F. S. Harries' new book

The Young Man and His Vocation

will help the young man to find his place in the world and make the most of himself.

The industrial demands of modern life are explained and the reader is shown how he can meet these demands. The opportunities and requirements in each kind of work are discussed in such a way that the young man is materially aided in selecting his life's work and in preparing himself for it.

Order one Today, just \$1.25.

THE UTAH FARMER
Book Department

LEHI

UTAH

Send for a seed catalogue and select your seeds now.

The Fundamentals of Corn Growing

We are going to publish a series of articles on corn growing taken from Farmers Bulletin 773 by C. P. Hartley and L. L. Look.

1. Maintaining a Balance Between Heat and Moisture.

There are certain fundamental requirements in moisture, heat, and fertility, which everywhere govern corn yields. A change in the supply of one may make a change in another advisable. Thus, the moisture requirement varies with the amount of heat available. In addition to water and heat, soil fertility and seed also must be regarded among the chief essentials. No one of these can be said to be more important than another. Where all are abundant except one (as water, for example), this one becomes the limiting factor and methods of supplying it becomes the important means of increasing the yield. In short, the secret of successful corn culture is to maintain a proper balance of moisture, heat, and fertility.

Corn, the authors point out, possesses characteristics which appear to make it adapted to drought conditions, and, on the other hand, has qualities which limit its possibilities as a crop for semi-arid regions and call for special adjustments. In producing a given weight of feed or dry matter, corn uses less water than certain other crops, as oats, clover, and alfalfa. It is deep rooted and can, if necessary, draw water from a depth of 5 or 6 feet. In hot, dry weather the rolling of the blades reduces the loss of water. On the other hand, the heat requirements and peculiar flowering habits of this crop make it less adapted to semiarid regions than other grain or forage crops.

Corn makes its entire growth during the season of highest temperature, growing best when the thermometer registers 80 degrees to 100 degrees F. It can not grow in early spring or late fall and its growth is retarded during the summer by cold nights or cool weather. It needs its greatest supply of moisture during the summer weeks when droughts are most likely and when rains are less effective because of losses from evaporation. In other words, the heat requirement of corn prevents growth at times when moisture conditions are likely to be most favorable, while lack of moisture frequently retards growth when heat conditions are most favorable. The problem, therefore, where heat is great and moisture deficient, is to store up moisture; and, where moisture is plentiful and heat deficient, so to handle the soil as to prevent moisture from lessening unduly such heat as may be available.

In the case of corn, which differs in the respect from perfect flowering plants, the setting of seed and the filling of the ears are seriously interfered with by summer droughts. Corn has two kinds of flowers: the tassel, or pollen bearer; and the seed-forming, or silk-bearing flowers. The pollen from one falling on the silk of the other is necessary to the development of grain. Droughty conditions often hasten the shedding of pollen, but delay the appearance of silks, with the result that the pollen is mostly wasted. If fertilization is prevented in this way, no amount of later rain can cause kernels to form

or make a good grain yield. The corn crop is sometimes injured by hot winds that do less damage to such crops as alfalfa and the grain sorghums. The problem here is by the choice of planting time and the selection of early-maturing or late-maturing varieties to bring about the double flowering of the corn at times when drought is least liable to interfere with fertilization.

Everything corn gets from the soil is in liquid form, and the crop can not grow unless the soil contains moisture to spare.

In our semi-arid regions the soils for the most part are fertile, and the limiting factor is either water or heat. Raising corn may be likened to raising steam in an engine. Too much water lowers the temperature, where

(Continued on page 7)

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VOLUME XIII.

LEHI, UTAH, SATURDAY, MARCH 3 1917

No. 31

Uses and Making of a Hotbed and a Cold-Frame

By Emil Hansen, U. A. C.

There are several varieties of flower and vegetable seeds which should be sown indoors or in a hotbed early in the spring in order for them to reach maturity the coming summer.

Such as Asters, Dianthus, Moon-flowers, Nasturtium, Pansy, Phlox, Ricinus, Salvia, Stocks, Verbena, Zinnias and others. Also early Cabbage, Cauliflower, Egg-plant, Lettuce, Pepper, Tomato, Kohl-Rabi, etc. Besides for the use of planting of flower and vegetable seeds, a hotbed can be used advantageously for promoting growth of Geraniums, Dahlias, Caladiums, and other plants which have been overwintered in the cellar and are to be used for bedding plants in the coming season.

A Cold-frame in connection with the hotbed is very profitable, that is when the seedlings have three or four leaves they could be transplanted from the hotbed into the cold-frame and remain growing until the weather condition is favorable to plant them outside; also where a crop of early radishes or lettuce is wanted a cold-frame can be used to good advantage.

When transplanting the lettuce into the cold-frame it should be planted a distance of 6 inches apart each way. Radishes to be sown broadcast in the frame, however, care should be taken that the seed is not sown too thick.

The preparation of making a Hotbed
The place chosen for a hotbed should be sheltered from the strong winds with an open exposure to the south.

The soil excavated and a pit made about 18 inches deep and 6 feet wide and as long as one sees fit. Each standard hotbed window sash being 6 feet x 6 feet.

Procure a sufficient amount of fresh horse manure to fill the pit and one foot above the surface of the ground. If the manure contains but little or no straw, add an equal amount of leaves to it. Mix them thoroughly and tramp the successive layers into a compact pile, then leave it in this condition until fermentation has started, which generally takes place in three days time.

When the steam starts to escape when the pile should be turned, the manure thoroughly mixed and forming a similar pile which should remain until a second fermentation begins. Then the manure is ready to be used in the pit. This is done by spreading it in layers to the required depth after which it should be trampled and the frames placed in position opening slightly towards the south. When an additional supply of manure could be placed solid around the outside of the frame, and the sashes put

on in cold weather. It is well to cover the windows with blankets, mats or other material, and should be left until the heat generates, in a course of 2 to 4 days it should be ready for the soil to be put in the frame.

If the thermometer is plunged into the manure and it registers 90 degrees or less, sufficient rich light soil, to make a depth of six inches when leveled, should be placed in the frame.

This being done the bed can be left covered a few days until the soil has become warmed through, then remove the sashes and rake the soil and kill the weeds which have started to germinate by that time, and make the surface of the soil level, then it is ready for sowing the seeds.

When the seeds have been sown, daily attention must be given. In mild weather the sashes can be raised slightly to admit air; the warmer the weather the higher the windows should be raised, and especially when the sun is shining, it takes but very little to burn the plants if this is neglected.

Towards evening before the air becomes cold, the sashes should be closed and during cold nights the beds covered.

When seeds have been sown the soil should be watered, (a watering pot with a fine sprinkler should be used) and attention given so that the soil never becomes real dry.

When the young plants have grown to a size where they have 3 or 4 leaves on they should be transplanted into another hotbed or a cold-frame.

How to make a Cold-frame.

A cold-frame is made on the surface of the ground and no excavating is required. Form the frame to fit the windows with boards about 10 inches high on the south or lower side and about 14 inches high on the north or upper side; this gives the proper slope for the window to catch the sun.

The soil in the frame should be rich and mellow; worked as a well prepared garden bed.

Towards the time for removing plants from the cold-frame to the garden, the windows should be removed, and only close during cold nights. This done to harden the plants, whereas if neglected will cause them to be tender.

A cold-frame is excellent for overwintering pansies, forgetmenots, daisies, etc., which should be transplanted into it during the months of September or October, (the seed to be sown in August.)

These plants will be in bloom

Suggestions For Horticulturists

These suggestions were taken from the annual address of President J. W. Knudson of the State Horticultural Society, given at their convention in Salt Lake City.

I wish to say at the beginning that I do not feel discouraged over the outlook for the fruit business in this state, as I believe that we are about to enter upon a period of greater prosperity. I look for new interest to develop in this industry and we want to put this organization in such shape that it can give the necessary support and encouragement to the new features which are bound to appear.

What we should have is a more systematic organization—one that will be looking after our interests during the entire year. If active committees had been at work since our last annual meeting we would have some material to guide us in our deliberations here today and furnish a positive basis for my recommendations.

Crop conditions the past season were far below normal. In fact, in many sections of the state the entire fruit crop was wiped out, resulting in strong markets and good prices for the growers who were fortunate enough to have fruit. While prices were good, better prices should have, and could have been obtained, had a closer co-operation existed between the selling agencies of the state and the growers, especially those who endeavor to market their own crops.

In many of the Middle and Eastern states, and I think in California, too, the societies of this kind have a fruit exhibit in connection with the annual meeting where liberal awards are made for the best displays along the different lines. I believe this is a most excellent idea and one that would add enthusiasm and interest in our annual gatherings. I heartily recommend its adoption in our work, if sufficient appropriations can be secured to carry out the plan successfully.

It, also, occurs to me that this organization has confined their membership too closely to people interested only in the growing of the different varieties of fruit. This is not right. Horticulture embraces much more than the growing of fruit, and I recommend that we extend an invitation to all truck gardeners, florists and landscape gardeners, etc., to join us in our deliberations and that some time be given to the discussion of market gardening, the growing of

very early in the spring.

During winter the snow and other coverings must be removed from the windows unless the soil in which the plants are planted is frozen.

flowers and beautifying of the grounds surrounding the home.

The merchant, the banker and all kinds of commercial enterprises in this state should be encouraged to take an active interest in the horticultural industry, particularly so in the large fruit growing sections, where their profits are directly affected by the success of the fruit crop. We need their moral and financial support.

A railroad rate committee has met with the officials of the various railroads and requested a reduction in freight rates on fruit shipments to all markets. We, also, took up matters pertaining to rates and loading privileges on mixed cars of vegetables and fruit to local points. The railroad officials promised to take these questions up with their superiors and report results. The question has not been followed up, owing to the fact that we had little or nothing to ship in car lots last season. We should now follow up the work and get something definite on this line.

At this particular time, I am reminded of the shortage in, and the high price now being paid for potatoes, onions, cabbage, etc. I firmly believe that high prices will prevail on these goods for the next year, particularly so on potatoes, as there is a great shortage of seed stock and I suggest that the growers look into this matter as good money can be made growing potatoes in our state with the price at \$1.00 per cwt. everything above this price being extraordinary.

The sugar industry in our state has been a great factor in helping to put the farmers on their feet, it has reduced the acreage of other crops so that better prices prevail for hay and all kinds of farm produce. The sugar people are in a position to materially aid the fruit industry and I believe that they are inclined to do so when the proper time comes. If the canners of fruit can secure sugar at prices which prevail on the Pacific Coast and at eastern points it will stimulate the canning industry in the state, and when this time comes it will put the Utah canner on a par with their eastern and western competitors and result in the utilization of large quantities of all kinds of fruit. This will go a long way towards overcoming the present depressed condition of the fruit industry. It will, also, relieve the pressure of the green fruit market and result in a more active demand and better prices. We have got to look to the manufacturer of fruit products to handle quantities of our crop and the growers must make reasonable prices

(Continued on page 15)

Dairying

FEEDING YOUNG DAIRY CALVES

Feeding the calf should begin before it is born, according to a bulletin recently issued by the U. S. Department of Agriculture. Poorly nourished cows give birth to weak, puny calves which are hard to raise. Cows which have an abundance of palatable and succulent feed and are in good body flesh and healthy, thrifty condition at calving time are more likely to produce well-developed, strong, and sturdy calves, which will respond normally to proper feed and care.

The calf should always receive its mother's milk at first, as the colostrum, or first milk, stimulates the calf's stomach and other digestive organs to action. Most dairymen prefer to keep the calf with the cow for about 48 hours immediately after birth. It may be best to allow a weak calf or one that does not gain strength readily to remain a longer time, but it is sometimes difficult to teach the calf to drink after sucking the cow for a time, and serious trouble may result from its failure to obtain food.

Successful raising of calves requires absolute cleanliness. Calf pens should always be kept clean and be supplied with plenty of dry bedding. Discarded feed should be removed from the feed boxes, which should be thoroughly brushed and cleaned each day. All milk feed should be fresh

and clean, which is true also of other feeds. Milk pails should be scalded thoroughly with boiling water, or sterilized with steam if possible.

Milk from cows having a communicable disease, as tuberculosis, should be pasteurized (heated to 145 degrees F. and held at that temperature for 30 minutes) before it is fed to calves. Separated milk from a creamery also should be pasteurized, because it is practically impossible to know that such milk is free from infection.

Better results are obtained by feeding young calves three times a day, with the periods between feeding as nearly equal as possible. When fed in this way the calf does not overload its stomach, and the digestion of the feed is more evenly distributed throughout the 24 hours. Regularity in feeding is important. When calves are fed but twice a day, the feeding should be as nearly as possible 12 hours apart.

At birth a 50-pound calf should have about 8 pounds of whole milk a day, while a 100-pound one should have about 12 pounds. For the first four days milk from the dam should be fed, then that from any of the other cows in the herd, preferably not from any that are nearly dry. Milk containing not more than 4 per cent butter fat is considered best.

At the beginning of the third week either skim or separated milk may be substituted for whole milk at the rate of 1 pound a day. The daily ration may be increased from 2 to 4 pounds, depending upon the vigor of the calf. When the calf does not drink eagerly what is offered, the quantity should be cut down. The ration at the end of the third week usually should be approximately one-half whole and one-half separated milk. During the fourth week the change should be continued until by the end of the week only separated milk is fed, unless the calf is very delicate. With especially vigorous calves the change to separated milk can be made about a week earlier. The quantity fed can be increased gradually to 18 to 20 pounds a day.

Six months is probably a good average age at which to wean calves from milk. The age depends upon the cost of the milk in relation to the value of the calf, its breed, size, vigor, etc. The season of the year and the other feeds available also must be considered. When the best of hay, silage, and a good variety of grains are available, or when good, succulent pasturage can be provided, the calf can be weaned earlier; also the stronger and more vigorous the calf the earlier it can be weaned. On the other hand, the more valuable the calf the more expense the owner is warranted in developing it, and the later it will probably be weaned. If skim or separated milk is plentiful, calves may be fed profitably until 8 or 10 months old.

When the calf is in its second week it should begin to receive grain, and when one month old it should eat about half a pound a day. After this time the quantity of grain may be gradually increased, feeding all that the calf will eat until 3 pounds a day is reached, probably during the third month. Grain fed to supplement separated milk should never be mixed with the milk. It is questionable whether the preparation of grain in any way, such as soaking or boiling, is advisable under most circumstances.

Wheat bran is eaten readily by young calves. Corn has an excellent physiological effect and to a great

extent may take the place of fat removed from skim or separated milk. Experiments tend to show that corn fed to calves should be cracked rather than finely ground. Ground oats are good in grain mixtures when available, but in many cases cost much more per unit of feed than corn and bran. The following grain mixtures are recommended in the bulletin:

1. Three parts cracked corn and one part wheat bran.
2. Three parts cracked corn, one part wheat bran, and one part ground oats.
3. Three parts cracked corn, one part wheat bran, one part ground oats, and one part linseed meal.
4. Five parts cracked corn, one part wheat bran, one part ground oats, and one part blood meal.
5. Oats, ground.

Clover hay, alfalfa hay, or the most palatable roughage available should be given the calf after the second week. Alfalfa is liable to cause scours, and should be fed sparingly at first and increased only after the calf gets accustomed to it. At first, hay should be furnished only a handful at a time and be placed so that it can not be soiled. For the first six months, at least, the calf should receive all the roughage of good quality that it will eat up clean. When the calf has access to good pasture during the first six months, it need not receive other roughage. It is not advisable, however, to have the calf under two months of age on pasture in the early spring.

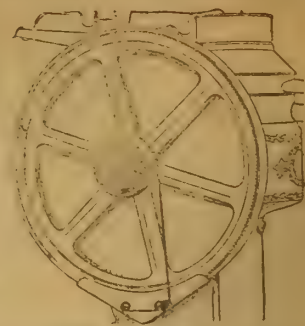
STANDARD WIDTHS FOR

WAGON TIRES

As the result of a long series of traction tests on earth and gravel roads, the U. S. Department of Agriculture recommends that the following widths of tire be adopted generally by manufacturers for wagons of different carrying capacities.

Type of wagon.	Gross weight loaded.	Width of tire.
	Pounds	Inches
1-horse wagon.....	2,000	2
Light 2-horse wagon....	3,500	2½
Medium 2-horse wagon	4,500	3
Standard 2-horse wagon	6,800	4
Heavy 2-horse wagon	7,500	5

These five types, says the circular, should be sufficient to meet all the needs of farming operations and general work, except the heavies trucking and certain specialized hauling which is likely to be confined to city pavements. That a name be adopted for each of these sizes and that the wagons be designated not by the size of skein but according to their gross load capacity. The gross carrying capacity of the wagon should be shown, it is said, by stencil or plate on the back of the rear axle. The size of skein for the five types of wagon named vary, says the circular, from 2½ or 2 3-8 inches for a 1-horse wagon to 3½ inches for the heavy 2-horse wagon.



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NINE people out of ten turn the separator handle too slowly.

Thousands of tests with experienced separator operators show this to be the case.

Other tests made by the highest authorities have shown conclusively that there is a big cream loss when the cream separator is not turned fast enough.

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But that is only one of the big advantages of the New De Laval. Other advantages are greater capacity, closer skimming and easier turning, simpler bowl construction, and easier washing.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for any desired information.

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SALT LAKE CITY.



WHAT TO EXPECT OF UTAH
AS A LIVE-STOCK CENTER
(Continued from page 1)

Ogden, promise to solve in a great measure the problem of successful marketing of live-stock and live-stock products, which has been rather troublesome up-to-date.

Lack of space prevents definite proof of the point thus briefly mentioned. Assuming them to be true—and plenty of proof is at hand—there

is no reason why Utah should not produce as many live-stock per square mile of tillable land as does any state in the Union. In fact, she should produce more because the mountains which are not tillable afford excellent range for thousands of head of cattle and sheep.

The following table gives the relations existing between area, population, and live-stock in Utah and surrounding states similarly located and of comparable conditions.

AREA, POPULATION AND LIVE-STOCK					
State	Land Area Sq. Mi.	Population	Population Per Sq. Mi.	Live-stock Per Sq. Mi.	Live-stock Per Capita
Wyoming	97,594	145,965	3.9	51	13.3
Idaho	83,354	325,594	1.5	53	34.8
Colorado	103,658	799,024	7.7	37	4.8
Utah	82,184	373,351	4.5	35	7.6
Arizona	113,810	204,354	1.8	26	14.2

It will be seen that Utah stands toward the last in the number of live-stock per square mile. Utah has only 7.6 head of live-stock per capita, the lowest number of any of the five states except Colorado and Arizona. The above comparison shows Utah low in the scale of livestock production as compared with other Rocky Mountain States as a whole. It is estimated by the State Bureau of Statistics in its Seventh Report that 40 per cent

of the land area of Utah is tillable. If this is the case and as much can be expected per square mile of tillable land in Utah as in other states, she is considerably below her possibilities as a live-stock state.

The following figures show the number of the various classes of live-stock per tillable square mile in Utah and the same data for the entire area of the State of Iowa.

CLASSES OF LIVESTOCK PER SQUARE MILE.							
	Square Miles	All Live-stock	Horses	Dairy Cattle	Other Cattle	Sheep	Swine
Utah (Calculated tillable area.)	32,874	87	4.5	2.9	12.4	63.5	3.4
Iowa (Total area)	55,586	290	29.6	25.0	49.2	22.9	16.3

In the case of all classes of live-stock except sheep it will be seen that Iowa has from four to ten times the number per square mile of her total area,

found per square mile of the tillable area in Utah. According to the census Iowa is the most densely stocked State in the Union when all live-stock are considered, but even Iowa is by no means over-stocked. Nor is Iowa agricultural devoted exclusively to live-stock. She is well to the front in many other lines as well. The basis upon which the comparison between Utah and Iowa is made seems to be a fair one and the sources of the data used reliable so that the results, even though somewhat startling, should not be questioned. When Iowa standard is reached Utah will have 9,415,000 live-stock in place of 2,853,000 as she now has; 963,600 horses instead of 146,000; 825,600 dairy cattle instead of 96,000; 1,632,000 other cattle in place of 408,000 and 537,600 hogs instead of 112,000.

When these numbers are reached and the high standard of quality attained which is possible under our almost ideal conditions, then Utah will be a power to be reckoned with in live-stock circles.

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a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

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"Catch anything?"

At this Tommy, in all the consciousness of guilt, quickly responded:

"Ain't been home yet."

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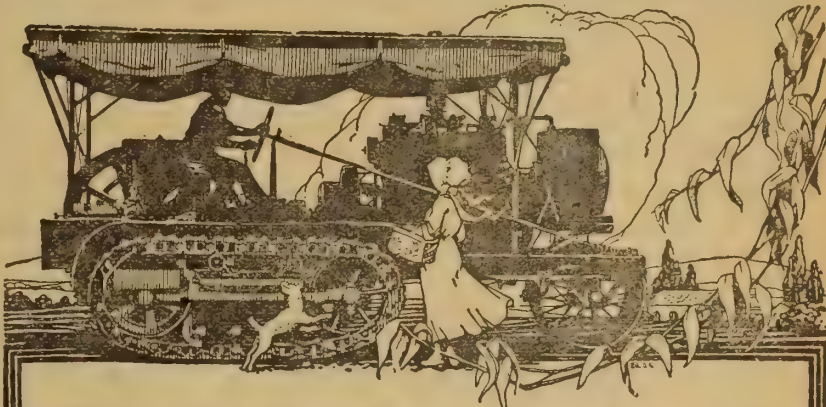


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Association, Utah State Bee Keepers' Association
Bear River Valley Farmers' Protective and Commercial
Association, Agricultural College Extension Depart-
ment and Utah State Fair Association, Utah-Idaho
Millers' and Grain Dealers' Association, Utah Fruit
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Advertising Rates—The advertising rates will be sent
upon application.

Now is the time to get that incubator ready.
Go over it very carefully, see that it is in good
running order and start it going.

Do you wait until the last moment before plant-
ing to select your seeds. Attend to this important
work now.

Look to your horses, and get them in condition
so that when spring work is ready, your horses
are ready to help you.

Look up your spraying tools, see that they are
in good condition. A little attention at this
time will save you time when the rush of work
is on.

With all the snow we have had this winter we
are going to have but a very little mud. There
is no frost in the ground and the snow as it melts
goes right into the ground.

Keep your live-stock off the farm land when
it is so wet that walking on it will "pack" it.
Every foot of land that does not produce some-
thing this year will be a loss to you.

We want to endorse and encourage those who
have stated such movements, as the raising of
more poultry, planting of vacant lots and gar-
dens with vegetables to help reduce the cost of
living.

Plan to grow some corn this year for ensilage.
Peas and oats are also good, as many of our
farmers have proven this winter. The silo is
one way of reducing the high cost of feed.

Encourage your boys and girls by giving them
responsibility. Let them have half-acre or more
to cultivate and run it for themselves. The Agri-
cultural College and Government will gladly
help direct in the work.

The farrowing season will soon be here. Do
not neglect the brood sow. Provide her with
shelter and a warm dry bed. Arrange so that she
can have some exercise during the day. Guard
against dampness and filth around the hog pens.

Never buy cheap seeds of any kind because
they are cheap for they are dear at any price.
High price is not necessarily a guarantee of high
quality. Buy only from reliable dealers or
farmers on whom you can depend. Pay more
attention to your seeds and you will be reward-
ed with larger and better yields.

POTATOES

How many potatoes are you going to plant this
year? This question you can often hear nowadays.

The short crop last year and the great demand
has sent the price of potatoes up until many are
getting "record prices" for their spuds. The potato
crop of the United States was short several
million bushel last year. We believe there will
be good prices this year because of the general
shortage of food stuff. There are, however, a few
things to remember about potatoes, one of them
is that potatoes are never carried over from one
season to another no matter how big or little the
season's crop may have been. Utah's large yield
last year was due largely to the interest taken
by our farmers in the selection of seed and the
preparation of the seed before planting. It would
be unwise to go to extremes this year with
potatoes. "Never carry all your eggs in one
basket," or never depend upon one crop for all
your returns. The outlook at present is for a
big crop at good prices. No one can tell now
what the market will be.

DRAG THE ROADS

If there is any one thing that must be done at
the right time in order to get the best results, it
is dragging our earth roads. It takes but a
short time to drag a mile or two, but it must be
done at the right time, or you do not get results.
As the snow melts away and the earth becomes
the least dry, get out with your drag. It is the
moist earth that is pulled from the high places,
filling up the low places, that packs and becomes
hard. It is too late when the road becomes
dusty to do your dragging. Good roads are a
valuable asset to any community and one of
the best ways of keeping a road in repair is to
drag it.

SAVE THE HEIFER CALVES.

If the movement for more and better live-stock
would encourage all of our farmers to keep the
better heifer calves, we could soon increase the
number of live-stock in our state. Too often
these calves are sold as veal. The man who has
no way of raising these calves should sell them
to some one who will. Often our stockmen or
farmers who would buy these calves does not
know where to find them. The farm bureaus can
do a good service by getting seller and buyer to-

gether. Let the man who wants to buy,
advertise, any way so we can prevent these heifer
calves from being sold as veal.

WHERE IS YOUR MACHINERY

As the snow melts away many a mowing
machine, plow, and other farm implements is
being uncovered. Unless one tries to count or
estimate the amount of machinery that goes all
winter without any cover or protection you can
hardly believe how serious the condition. One
man said, "I believed that more machinery is lost
by resting than is worn out." If such a state-
ment is any where near true it is time for the
farmers to correct such a condition.

Machinery is going to cost more and this is
another reason why better care should be taken
of our farming tools. But why let such a loss
continue—give your machinery better care and
profit by the time spent in doing it. Right now
is the time to start. Look after your tools, oil
them, paint them or any other method just so you
do not allow the serious loss and waste to con-
tinue.

GROW SOME EARLY VEGETABLES

If you want early vegetables plan and prepare
right now for them. Proper kind of seed is help-
ful in making the start. Some will go to the
trouble of starting sets and plants in the house,
when warm weather comes they have a good
start. Cold frames will hurry things along. Se-
lect some dry, sandy loam spot where the sun
will strike it all day and plant some hardy vege-
tables such as radish, onions, lettuce, carrots,
etc. One way to have lettuce nearly all the year
round is to sow a yard or two square of ground
fairly thick with seed and as it comes up cut it off
and another crop will grow. A piece of burlap to
cover the spot will help germinate the seed and
keep the chickens off. Remove when plants have
a good start.

THE COST OF GOOD CONCRETE ROADS

Improved and permanent good road brings
lower hauling costs.

The government has been conducting some
studies in eight different counties from 1909 to
1915. These counties had just issued bonds for
road improvement. The average gross annual
saving in hauling costs due to the road improve-
ments in these eight counties was found to be
17.9 cents per ton-mile, while the net saving was
found to be 11.6 cents.

What would such a saving mean to Utah County
farmers who haul their produce to Salt Lake City
or the mines in Bingham if they build a concrete
road through the county. In one county where
there was a concrete road the farmer under old
conditions could only make one trip a day to
market. With the new road he could make four
where there was no hindrances such as mud holes
etc. It seems as if the only cost to be consid-
ered is the cost of bad roads. A muddy, rutty, high
way is no road at all.

There is an old saying "paint cost nothing." In
other words the extended life and use of the
article painted more than pays for the paint. So
with good concrete roads, they cost nothing, in
fact, they pay for themselves many times over in
the increased facilities they afford for reaching
the market.

Good roads are what we need, let's work for
them and profit from the pleasure and saving
they will bring us.

WHAT EVERY FARMER WANTS

Cheap and Efficient Transportation His Great Need—How It Can Best Be Assured.

THE present situation of the railroads present two alternatives, efficient federal regulation or federal ownership. The experience of other countries proves conclusively that government ownership of railroads is more costly and less efficient than the system of private ownership in this country. The railroads of the United States have the lowest freight rates, the smallest capitalization per mile, the highest operating efficiency and pay the highest wages of any railroads in the world.

High Rates on Government Roads

The charge for hauling a ton of freight one mile on the government owned roads of various countries and on the privately owned roads of the United States is shown in the following table:

	Average Freight rate per ton mile
Germany (Gov't Railways)	1.24 cent
France	1.30 cent
Australia	
New South Wales	1.89 cent
South Australia	1.75 cent
Switzerland	2.63 cent
Canada (Private ownership)	.76 cent
United States	.73 cent

No railway system under government ownership can show a record for cheapness and service approaching that of American Railroads under private ownership. What the railroad situation needs is the adoption of a system of national regulation that will encourage initiative and investment and enable the carriers to meet the growing requirements of American business.

Keep Railroads Out of Politics and Politics Out of the Railroads

It is to the interest of the railroads and the interest of the whole country that the railroads keep out of politics and that politics be kept out of their management. Government ownership under our political system would make the control of the railroads a partisan issue at every election. It would bring political and economic disaster. No man in the country stands to lose more by the adoption of a political system of railroad management than the farmer. None will profit more from efficient national regulation that will do away with the present conflicts and waste of local control and enable the railroad to make the extensions and improvements necessary to keep pace with the business progress of the nation. We invite discussion of this question and shall be glad to answer questions and to supply information on request.

RAILWAY EXECUTIVES' ADVISORY COMMITTEE
Broadway New York City

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- WALTERS, Ch. Atlantic Coast Line R. R.
- DANIEL WILLARD, Pres. B. & O. R. R.

THE FUNDAMENTALS OF CORN GROWING

(Continued from page 2)

as too little water is dangerous. Growth can take place only while there is a proper balance between heat and water. The two must be in the soil at the same time. Water falling as snow or rain before heat is present should be stored in the soil. The boiler should be filled before the fire is started.

In northern sections and at high altitudes the lack of heat limits corn yields, while in southern sections it is the lack of moisture. Abundant soil moisture reduces soil heat—desirable in the South, but undesirable in the North. Far north a soil with a wet surface is usually a cold soil. Here the conservation of heat is more important than the conservation of moisture. Evaporation keeps the soil cool. Soil moisture rises to the surface to replace that which evaporates. Cultivation checks the rise of soil moisture to the surface, enabling the surface to dry more rapidly. The dry surface then becomes warm by taking in heat, which otherwise would have been wasted in evaporating water from below. Corn cultivated late in the afternoon may be frosted that night, while adjoining uncultivated rows escape the frost. The more rapid evaporation caused by recent cultivation first cools the surface, but as soon as the surface dries, the soil becomes warm quicker and the crop grows more rapidly than it would have done without the cultivation.

In northern localities, where lack of heat is a factor limiting corn yields, summer fallowing and moisture conservation tend to keep the soil cold and seldom give increased yields of corn. In southern localities, where lack of moisture is the limiting factor, summer fallowing and practices which increase soil moisture give increased yields of corn.

In the southern part of the Great Plains, lack of moisture is the chief limiting factor. Ignoring special instances and speaking generally, every operation should be conducted in such manner and at such time as to enable the soil to take in and retain water. But just how and when is this to be done? Should the land be plowed deep or shallow, in the fall or in the spring? On what date should corn be planted, and how many times should it be cultivated?

These questions can not be answered correctly by rule or by averages. Each field of corn presents a combination of conditions which demand consideration in answering these questions. Time-of-planting tests conducted yearly for 100 years at a particular station might show that the highest average yield had been obtained from corn planted on May 10, and the next spring might be so unusually warm and forward as to warrant planting in April.

(The next article will deal with getting moisture into the soil and preparing corn for planting).

IRRIGATORS' QUERIES

O. W. Isrealson, U. A. C.

Is it necessary to irrigate an alfalfa tract, the soil of which is kept moist by seepage water from higher land?

Whether or not it is desirable to irrigate a tract similar to the one above described, is dependent largely upon the crop yield which may be obtained without irrigation. It is true that in some cases, seepage water seems to be highly desirable,

Interlocking CEMENT STAVE Silos



Salt Lake County, Smith Bros. Jersey Farm, Murray, Utah, 12 x 35 ft. silo, 100 ton capacity.

Write Smith Bros. Jersey Farm and ask them if the silo is a success.

Intermountain Concrete Co. OGDEN-UTAH

Please Send Me Catalogue No. 3

NAME

ADDRESS

Planet Jr. Wheel Hoe

gets bigger crops with half the work.

This No. 16 Planet Jr Single Wheel Hoe, Cultivator, Rake and Plow is the highest type of single wheel hoe made. Light and durable—can be used by man, woman, or boy. Will do all the cultivation in your garden in the easiest, quickest and best way. Strong indestructible steel frame. High, easy-running steel wheel. Costs little, and lasts a lifetime. 14 other styles of wheel hoes—various prices.

Come let us show you all the Planet Jr labor-saving implements.

CONSOLIDATED WAGON AND MACHINE COMPANY



since it maintains a uniform moisture content, and causes a very excellent crop yield. On the other hand, some soils are kept moist to a point within about one foot of the surface by seepage water; but it is absolutely essential to apply very small, frequent irrigations to supply the plant roots which are near the surface of the soil. This question brings up a problem which is of great importance in Utah; that is, while as above mentioned, it may seem desirable to have one's soil moistened by seepage water,

this usually is the case only for a short period of time. After a few years, almost invariably soil so moistened becomes non-productive because of an excess quantity of water. If I were in your position, I should urge the owner, or owners, of the higher lands to apply less water, in order that my land would not be fed by seepage from his irrigation.

Send in your order for Butter Wrappers today.

Wonderful Yield Sugar Beets

Undoubtedly the farmers of this county, as well as all other counties speaking of them as a whole, do not get the greatest yield per acre of sugar beets that is possible. In fact it has been demonstrated that more than double the average yield can be produced per acre in this valley. The average yield in Bear River Valley is 14 tons per acre; the average yield for the rest of the world is 12 tons per acre.

That this average is altogether too low was fully demonstrated by Mr. John P. Holmgren way back in 1905 when the industry was comparatively young in the section and yet despite his splendid example there are enough farmers who do not cultivate their beet fields sufficiently to bring the general average above the tonnage stated.

Mr. Holmgren was asked for a statement as to how he made five acres produce 39 tons to the acre in 1905, and he outlined his method in detail which, by the way, was a very simple one and one that every farmer could profitably adopt.

Mr. Holmgren was after the grand prize offered by the sugar company for the greatest tonnage of beets per acre, so he plowed his field the fall previous, setting the plow ten inches in the ground and turning over the soil in deep even furrows and let it lay over winter. In the spring as soon as possible, he was on to it again with a harrow pulverizing it thoroughly so that when it came time to plant the soil was fine and loose.

The seed was planted with an ordinary drill which will miss sometimes as is well known leaving as much as a rod or more of the row unplanted. Mr. Holmgren knew this and he had calculated before hand just how many plants there should be to the acre for he had calculated that an acre covers 6,272,640 square inches and with the rows planted 20 inches apart with the beets separated from each other by 10 inches of space in the row, he should then have 31,363 plants to the acre. Calculating that each beet would weigh 2 pounds he figured his tonnage right down to a scientific basis and in making his estimate he gave plenty of leeway so that his calculations were not under the possible nor probable.

As stated above, Mr. Holmgren knew that the seed drill missed places in planting so he followed along when the young beets appeared with a hoe and a pocket of seed and wherever those missed places occurred he made a little furrow with his hoe and planted some seed. The result was when the beets came up, he had measurably full rows with very few missed spots. When the thinning time came on, Mr. Holmgren was on the job with his crowd of thinners and instructed them carefully in the labor, advising them not to cut out a plant on the regular place for it, which was every 10 inches, but despite that many places were found when the job was completed where two plants had been cut out instead of one and a space of 16 or 24 inches would occur where there was not a single plant growing. In other places two plants were standing close together, having been missed by the thinners.

Mr. Holmgren waited until just before the second thinning then he went over his field with the assistance of one of his children and a bucket of water, plucked up the plants that

were too close together and transplanted them in the places where the thinners had cut them out too far apart. This last operation resulted in placing a beet plant on every square in the field or in giving 31,363 plants to the acre. He did not count his plants but knew that he had approximately that number. Practically every one of the beet plants grew and during the summer when officials of the sugar factory visited the farm and saw the crop they predicated that the yield would be in the neighborhood of 30 tons to the acre. Mr. Holmgren gasped for he had no idea in the world his labors would result in such a tremendous tonnage but when the harvest time came and the crop was plowed up and weighed, the yield was averaged up to 39 tons per acre, the highest yield ever secured from any farm in any country where sugar beets are grown. Some of the beets, instead of weighing but two pounds as Mr. Holmgren had calculated they would, weighed 19 pounds. So that his labors opened up two avenues for the increase of the tonnage. He received as a premium \$150 cash from the sugar company and \$4.50 per ton for his beets or \$175.50 per acre for his crop without deducting the cost of production. At the present average of 14 tons to the acre, and at the rate of \$4.50 per ton the gross price per acre the farmer receives for his sugar beets is \$63.00. Too much difference altogether and yet Mr. Holmgren aver that \$25 would more than pay for the extra work he put in on his 5 acre field in planting where the seeder had missed and in transplanting where the boys had cut out the plants.

If then it is possible to spend twenty five dollars in extra labor and increase the tonnage on 5 acres more than 100 per cent and the gross price from \$63 to \$175.00 per acre, the point seems to be well taken that the yield of sugar beets per acre should be advanced. What has been done once surely can be done again and the example of Mr. Holmgren should serve as a stimulus to the farmers generally. A little extra work on the beet field at planting and thinning time means less interest to pay and a quicker release of the mortgage, providing there is one, or a bigger surplus in the bank anyone of which is worth bending every effort for.

FARM OR MINE

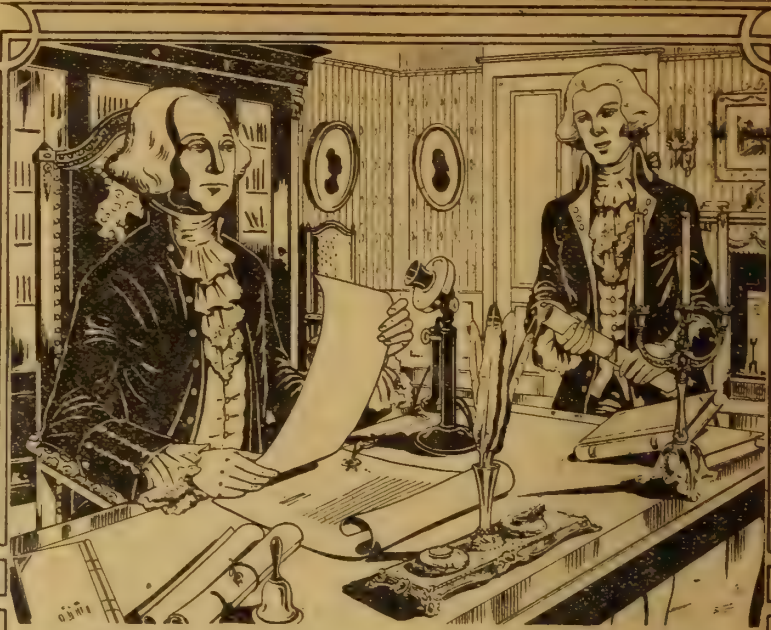
Are you a land owner? If so, what is your intention with regard to the land that you own? Do you propose to regard it merely as a business investment, and to extract from it every possible dollar of profit? Are you going to farm, or mine it?

There are farmers whose treatment of their land is calculated to leave the impression that they are the ones for whom it was originally created, and that when they should cease to need it no other use would ever be made of it.

On the other hand, there are men—and many of them—who, while striving to make their land as productive as possible, have yet an eye to the future owners.

Every farmer, when he takes charge of a piece of ground, should frame his simple resolution:

"I hereby resolve that, whether my occupancy of this land be long or short, I will use every means at my



Washington and The Telephone

Can you imagine "the Father of his Country" using a telephone? Can you fancy his friends calling him by telephone on February 22nd to wish him "many happy returns of the day?" How greatly comprehensive telephone service would have multiplied Washington's ability at the head of the Continental Army! How it would have simplified his duties as the chief executive of our newborn Nation! The telephone is still young, but it serves the public to an extent that would have been beyond the conception of Washington's day and generation. So intimately has the telephone won its way into the very lives of the people of today, that a general cessation of the service would be nothing less than a national calamity. By the way, has it been noticed that while every other commodity has been steadily raising in price, and while the cost of materials required in the furnishing of telephone service is constantly increasing, telephone rates in general have remained the same? Gradually the margin between our total revenues and our operating costs has narrowed until the lines are too close for comfort. Washington was a servant of the public; but he was never confronted with problem of conducting a public with a fixed rate of income, and trying to make this balance with steadily increasing costs.

The Mountain States Telephone and Telegraph Co.

Waterproof Your Harness

Keep your harness from becoming dry and brittle, and prevent it from losing its toughness, by insuring it against wet weather.

Keep the pores of the leather closed in winter and make your harness water-proof by using—

DUCK-BACK Harness Oil

Water cannot penetrate leather when it is treated with Duck-Back Harness Oil. This is a natural oil for harnesses; it keeps the leather soft and helps it retain its original strength.

With the approach of spring and damp weather, you should have a good supply of Duck-Back Harness Oil on hand.

Buy it from your dealer. If he should happen to be out of stock do not accept a substitute but write the—

UTAH OIL REFINING CO.

Refiners

Salt Lake City, Utah

command to leave it more productive than when I found it."

If this were the guiding principle of every farmer's life, what a blessed and productive country ours would become in a few generations of time!

And why not?

Every farmer who has ever worked with impoverished soil knows how discouraging and heart sickening is the struggle.

And every farmer who has honestly endeavored to improve his land to a point of real productiveness knows how pleasing it is to see his yield mount upward from year to year and to feel that as the seasons go by he is adding substantially to the wealth of this country—for after all is said, land is the great tangible asset of the earth.

The man who causes two blades of grass to grow where only one was growing is a benefactor of mankind.

The man who so depletes his soil that only one blade will grow where two formerly grew, is a robber.

Hard words—yes, hard, but true. No man has a right to impoverish the soil, even if he does hold a title deed to it. At best it is only his for a season, when it must pass on to another rightful owner.

And what about the rights of that next owner? And the next, and the next?

When you pursue a policy that impoverishes your land it goes to your son at your demise poorer than when you received it.

Have you, in that event, been honest with your son? He had a right to receive from you what you received—certainly no less.

Will the farmers of America rob the unborn generations, or will they leave for them the legacy of a better land than they themselves inherited?

It is a personal question which each individual must answer for himself.—Logan Journal.

CARE OF SOW AND PIGS

Preparedness at Farrowing Time is Money Saved—Proper Handling Prevents Losses.

Farmers who intelligently feed and care for their pregnant sows, so as not to overload them with fat, but instead give them feeds for the development of bone and muscle, are on the right road toward the production of strong, healthy litters. Their preparedness program, however, does not end here.

Two weeks before farrowing the sow should be put into a farrowing pen so that she will become acquainted and contented in her new quarters. The farrowing pen should be dry and free from drafts. Provide the pen with a guardrail made of 2 by 4 inch planks set 8 inches from the wall and 4 inches from the floor to prevent the sow from crushing the pigs against the wall. Use only a small quantity of bedding; leaves or straw are preferable. See that the sow has plenty of fresh water.

It pays to keep the sow quiet. Assistance at the time of farrowing should be at hand if needed, but the sow need not be helped if she is getting along well. In cold weather put the newly born pigs in a well-warmed basket, and after farrowing is over the pigs should be placed with the sow, care being taken that each one gets to a teat. When the after birth passed, it should be removed from the pen at once and burned or buried. After farrowing, the sow should have nothing but water and a little slop for the first day. The feed-

ing for the first three or four days should be light, and the time consumed in getting the sow on full feed should be from a week to 10 days, depending on the condition of the sow and the size and thrift of the litter. It takes plenty of sow's milk to make healthy, growing pigs. If the pigs begin to scour, feed the sow less and give her plenty of strong limewater.

It is very necessary that the little pigs have plenty of exercise and all the sunlight that can be given them. Do not allow the pigs to run out during a cold rain. If possible, provide green feed or roots. These keep the sow healthy and cheapen the ration. Encourage the pigs to eat grain after they are three or four weeks old. Build a creep for them so they can feed alone. At this age feed for bone and muscle. Give them all the skim milk you can. If skim milk is not available give them some meal and plenty of pasture. In about 8 or 10 weeks the pigs will have practically weaned themselves. After they have been successfully weaned the most perplexing job is over.

By putting into practice the essential points above mentioned the number of pigs raised to weaning should be increased. Hogs never fail to respond to good care. Kind treatment always means contentment, with its corresponding profits.

COST OF RAISING

LEGHORN PULLETS

The experiment station of Indiana have just issued a bulletin on the above subject by A. G. Phillips, we give the summary:

1. Based on four seasons' work and several thousand chicks hatched, it required 1.83 eggs set, for every Leghorn chick hatched.

2. The cost of hatching these eggs was \$.021 per chick, which when added to the cost of eggs increased the total cost of a chick when hatched to \$.057.

3. Based on the first twelve weeks of life, it took 5.69 pounds of grain and mash and 5.07 pounds of milk, costing \$.1434 to feed a Leghorn chick.

4. During the same time, it took 3.59 pounds of grain and mash and 3.41 pounds of milk, costing \$.084, to produce one pound of gain.

5. When figuring cost of feed, fuel, labor and litter, the whole cost of one pound of gain was \$.154.

6. The average Leghorn pullet twenty-four weeks old and ready to lay, weighed 2.75 pounds.

7. The feed was by far the most expensive item in the cost of rearing chicks.

8. On the basis of 100 chicks hatched and a 17 per cent mortality, the per cent pullets and the per cent cockerels were 40.1 and 42.9 respectively.

9. The time of hatching greatly influenced the rate of growth of chicks, price of broilers, net cost of growing, and weight of pullets at laying age. Early hatching paid best.

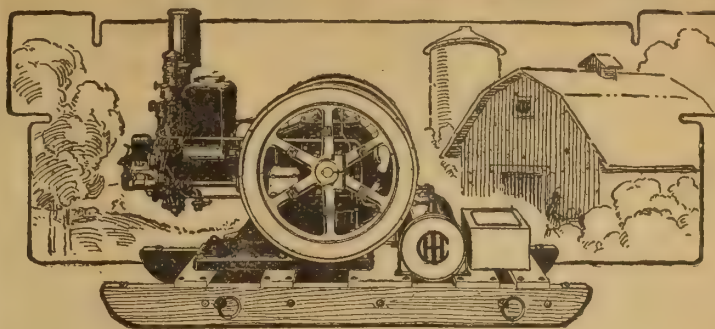
10. Early cockerels were sold at a profit. May-hatched broilers sold at a loss.

11. The gross average cost of a pullet was \$.434. This, less profits in cockerels, made the net cost \$.381.

12. Mortality varied and influenced the final cost. The average mortality of 999 chicks was 17 per cent.

13. For every pullet reared it required the setting of 4.57 eggs.

14. Cockerels grew more rapidly than pullets.



Does Its Work for Little Money

WHEN buying an engine for any farm job you can't beat the Mogul engine for economy—no matter where you look or what price you pay. A Mogul gives you steady power at the lowest cost per day or per year of service—any way you figure it. It works on the cheapest engine fuel you can buy, common coal oil. It uses only just enough fuel to carry the load. It starts and runs on magneto—no batteries to buy or renew. Its oiler takes care of every bearing, and never forgets. It is as near automatic as an engine can be made and it handles all kinds of engine work.

The Mogul is made to do its work for little money—less than any cheap engine. Then, it will outlast two or three cheap engines. If you want steady reliable power at the lowest possible cost—and, of course, you do—buy a Mogul engine in any size from 1 to 50-H. P. If you don't know the local dealer who sells Mogul engines, write to us. We'll tell you where to find him and we'll send you our engine books.

International Harvester Company of America

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Name Your Own Price for a rich Irrigated Farm

at Mosida, Utah County, Utah

This wonderful farming project, in the most fertile valley in Utah, will be **SOLD AT AUCTION** under order of the District Court, on Monday, March 19, at 10 a. m.

Farmers---Come and Bid!

This is positively the greatest opportunity ever offered in Utah to buy first class irrigated lands at a fraction of their actual value.

Adjoining lands were sold at \$100, \$150 and \$200 per acre. You may be able to buy these farms as low as \$40 to \$60 per acre. Offered in units of 40 acre farms.

SPECIAL NOTICE: The Mosida Hotel, Canal System and all other property of the Mosida Fruit Lands Co., will also be sold at public auction. Don't miss this opportunity!

For full particulars see Legal Notice in Thursday's Deseret Semi-Weekly News or write **AT ONCE** to

H. C. ALLEN, Receiver

1401 Walker Bank Building.

Salt Lake City.

With The County Agents

We are giving this week a number of reports as submitted by the various committees to the Farm Bureau and Round-Ups at Ogden and Logan. They should interest every reader as they are the suggestions that the county agents will use in planning his work.

Report of Committee on Dairying.

1. We recommend that, wherever the needed conditions of production and marketing are available, or can be made so, small farms where only a few live-stock can be kept should have dairy stock.

2. The greatest profits come from good shelter and the extra feed of the proper kind, fed to good dairy cattle. For this reason we recommend better care and feeding.

3. Where silage crops can be grown profitably, silos should be encouraged to supply cheap and succulent feed. Where silage is not available, some good root crop should be grown to take its place.

4. In order to improve the dairy herd, we recommend eliminating unprofitable cows from the herd by means of systematic record keeping.

5. Only pure bred dairy sires with a good production record in their immediate pedigreed ancestors, should be used to head the dairy herds.

6. All heifer calves from good cows should be raised.

7. For the best efficiency in dairying, we highly recommend regularity

in the care and management of the herd.

8. We further recommend that dairying should be made a business and not something to be done extra to the regular farm work.

9. Conditions for keeping the cows clean and to make milking more attractive, should be very much improved.

10. Wherever conditions and the number of cows will justify, we recommend co-operative factories and the improvement in quality of products from all milk plants, cheese factories and creameries.

(Signed)

Ben R. Eldredge,
H. A. Christenson,
Wm. W. Owens.
Committee.

Report of Committee on "Form and Functions of County Organization."

As the result of careful investigation of existing county organizations in Utah and elsewhere, we recommend the following:

1. The membership of the county organization should consist of the membership of all local branches in the county.

2. The local officers should consist of a president, a vice-president, a secretary-treasurer, and two or more additional executive committeemen.

3. The county organization should be directed by a board of directors consisting of the presidents of all local organizations. Its executive committee should consist of a president, a vice-president, and a secretary-treasurer. The State director should be chosen from the County Executive Committee; County Agent to act as an advisory member of this Committee.

4. There should be the following standing committees: (a) Membership and Finance, (b) Publicity and Dissemination of Information, (c) Excursions, Fairs, Socials, etc., (d) Crop Improvement, (e) Live-stock Improvement, (f) Purchasing and Marketing.

5. There should be at least one committeeman appointed to take charge of each project in the county.

6. These county committeemen should be appointed by the president with the advice of the county agent and approved by the county board.

7. Each County Project Committeeman may appoint a local Committeeman from each district concerned to act on the project, the appointment to be agreeable to the County Agent and the local president.

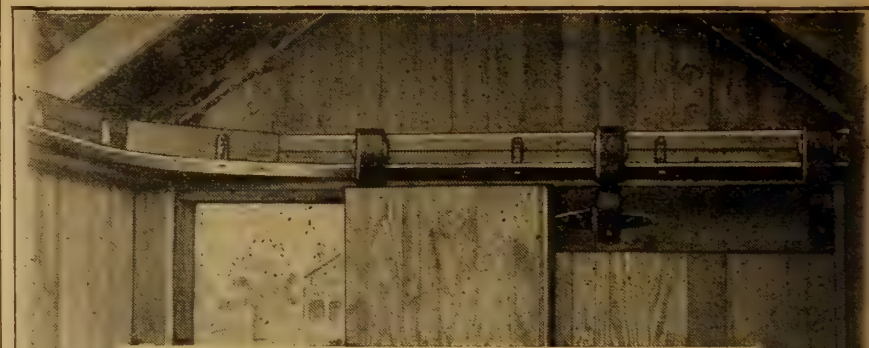
8. Each member of the local executive committee should be placed in charge of a local standing committee.

Functions

1. The primary functions of the Farm Bureau should be to effectively carry out a definite program of agricultural work based on projects. This should include such work as increased crop and live-stock production, standardization, control of animal and plant diseases and insect pests, weed control, sanitation and improvement of road, social, fair and school conditions.

2. Co-operative selling of farm products should be encouraged. Co-operative purchasing should be indulged in only when present purchasing facilities are inadequate or prices unjust.

Co-operative purchasing of live-stock and high grade seed is advisable under most conditions. The Live-stock Committee, the county agent, and the



Louden Garage Door Hanger

Low Enough In Cost for the Cheapest Garage
Classy Enough In Appearance For the Most Particular Buyer.

No clumsy swinging doors; no posts in the yard; no waste space in the garage, that's the LOUDEN SPECIAL GARAGE DOOR.

It is hinged in three sections and hung on roller bearings swivelled trolleys. Slides around the corner "as slick as grease," and lies flat against the side wall when open.

One section swings like an ordinary hinged door; no special foot entrance necessary.

Don't worry about the door fittings; we furnish everything but the lumber—track, hangers, hinges, stay rollers, handles, hasp and staple, nails and screws.

It's a big "buy" for a small price. Ask us for Booklet No. 9.

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IRRIGATE Your Field and Garden.

Get larger yields and profits. Provide fire protection for your buildings, and water for your stock by installing an

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Pure Seed Specialists, Waterloo, Iowa.

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The man who makes the money keeps the old hen laying eggs and uses **Buckeye Incubators** and **Brooders** to raise the chicks.

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SALT LAKE

SOME FIGURES WORTH

STUDYING

It is always best to look facts squarely in the face and this was never truer than at this time.

While the population of the country has increased from 75,994,000 (Census year 1900) to 101,882,000 in 1916, the available food to feed the

people has decreased.

Thirty-seven per cent of our food is meat, butter and cheese. Thirty-one per cent cereals. Thirteen per cent potatoes. The production of all these materials has decreased in an alarming manner.

The following figures show where we stand as the season of 1917 opens:

		Total Production	Production Per Capita	Decrease
Meats	1899	18,865,000,000 lbs.	248.2 lbs.	28.6 lbs.
	1915	22,378,000,000 lbs.	219.6 lbs.	
Milk	1899	7,265,804,304 gals.	95.6 gals.	20.1 gals.
	1915		75.5 gals.	
Butter	1899	1,790,097,244 lbs.	23.6 lbs.	2.5 lbs.
Cheese	1915	1,942,378,069 lbs.	21.1 lbs.	
Cereals	1899	3,333,868,700 bu.	43.9 bu.	3.7 bu.
	1915	4,094,986,999 bu.	40.2 bu.	
Potatoes	1899	273,318,167 bu.	3.6 bu.	0.1 bu.
	1915	359,103,000 bu.	3.5 bu.	

specialist should know this business and be prepared to protect the farmer.
(Signed) Jas. R. Beus,
Jos. P. Welch,
C. W. Lindsay,
R. J. Evans.

Report of Committee on Dry-Farming.

We are unanimously agreed that a general propaganda on dry-farming should be conducted covering the State, since there are vast areas of land in almost every county, now lying dormant, or producing limited crops, and that are capable of producing profitable crops under dry-farm methods.

We recommend therefore, that the following phases of this work receive special attention:

1st. The Presentation of Dry-Farming Possibilities in each Section, and Aid Available to the Farmers.

2nd. Adequate Equipment for the Farm.

3rd. Cultural Methods, or Management of the Soil.

To meet the requirements in the prosecution of this work we recommend the following procedure:

First: The Specialist and County Agent should together make a preliminary study of all local conditions, and determine on the possibilities. The Specialist should then write his report, stating his findings, which should be forthwith printed and receive general distribution among farmers of the district. Articles dealing with local conditions for publication in local papers can be written by the specialists or County Agent, and approved by the other.

Meetings with the farmers should be held at appropriate times, affording the opportunity to the Specialist and County Agent of discussing conditions and advising the farmers of the Aid available and how they may obtain it.

Second. In every instance, when opportunity affords, both the Specialist and County Agent should advise farmers to procure equipment sufficient, and only sufficient, to meet economical ends; and confine their farm operations within the limits of the efficiency of their equipment. Advice should be given to have all motive power, implements and machinery of a good standard grade and kept in first class shape and properly used when not in use.

Third: The Management of the soil to be conducted by co-operative demonstrations under project work, and since a large percentage of the crop failures are due to a practice of improper methods we strongly urge a vigorous campaign for a closer servance of the approved cultural methods, with special emphasis on the fallow system.

We submit that the essential items to observe in the management of the soil to obtain best results, are:

(a) Reasonably deep plowing (8 to 10 inches) to be done in fall of the year, or early spring, when the soil is moist and friable.

(b) Harrowing plowed land early in spring as soon as it becomes friable, and two to four times during summer.

(c) The complete control and elimination of weeds by use of the cultivator, weeder, or other efficient implement, while the weeds are young.

(d) All cultural operations should be done under conditions that would aerate the soil and render the plant food available to the plants, and conserve all the moisture possible. We recommend that no dry-farm

project work be undertaken in the counties without the knowledge and approval of the Specialist; and that the County Agent advise the Specialist from time to time of the progress of all such project work.

We believe the most effective means of accomplishing this is by: Co-operative Demonstrations through the following:

- (a) Farmer.
- (b) County Agent.
- (c) Farm Bureau.
- (d) Specialist.

(a) The Farmer will be required to sign an agreement to follow the instructions of the County Agent, and Specialist.

(b) The County Agent shall take the initiative in all the demonstrations and assist the Farm Bureau (when there is a Bureau in such district) in choosing the demonstration farmer to conduct such demonstrations; and shall further agree with the farmer to do all in his power to make the demonstration a success; such as offering suggestions, making frequent visits, etc.

(c) The Farm Bureau is expected to confer with the County Agent in making plans for the dry-farm work in its district and in choosing the co-operative farmers in that district. It shall further be expected to co-operate with the farmers chosen and the County Agent in making the demonstrations a success.

(1) The Bureau will visit these farms frequently, (2) will encourage the Co-operators in every possible way, (3) will aid the County Agent in collecting the data, (4) will use this data secured in their local bureau for benefit of all local members, (5) will furnish this data to County Farm Bureaus for public use, (6) shall render wholesome assistance to County Agent in running excursions to these farms, and (7) shall assist in any other way that will make this work a success.

(d) The Specialist shall make visits into the various counties as often as possible, paying particular attention to urgent calls, asking for special action, and shall render all assistance possible in determining on projects, in visiting demonstration farms and encouraging other farmers in dry-farm practices.

He shall endeavor to meet the requirements of the County Agents, in attending meetings of the farmers, excursions to the demonstration farms, and in working up active interest in the various districts.

As far as possible he shall advise the County Agent a month in advance of his contemplated visits.

(Signed)

J. H. Paxman,
Robert C. Stewart,
Heber J. Webb.
Committee.

THE STINGY THING

Lysander, a New York State farmer, was telling his troubles to a neighbor, and among other things said that the wife of the farmer who employed him was "too darned close for any use."

"This very morning," said he, "she said to me: 'Lysander, do you know how many pancakes you have et this morning?'" I said, 'No, ma'am, I an't had no occasion to count 'em.' 'Well,' says she, 'that last one was the twenty-sixth.' And it made me so dodgasted mad I jest got up from the table and went to work without my breakfast."—Exchange.

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The design and construction of a tractor is mighty important. Study these special features in the design and construction of Avery Tractors and you will understand why they are making good on any size farm—large, medium or small.

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SECOND—Avery Tractors have two rear drive wheels and two speeds—a big advantage over single-drive and one-speed tractors.

THIRD—Avery Tractors have slow-speed heavy duty opposed motors—not high-speed, light automobile motors.

FOURTH—Avery crankshafts are one-half the diameter of the cylinder or more. There has never been a broken Avery crankshaft.

FIFTH—Avery motors have renewable inner cylinder walls. These wearing parts can be replaced without buying an entirely new cylinder.

SIXTH—Avery Tractors are entirely free from all pumps and fans. All such easily broken and troublesome parts are done away with in the construction of an Avery Tractor.

All these features will be gladly explained to you when you call at our office and warehouse, or write us for the large Tractor Farm Book.

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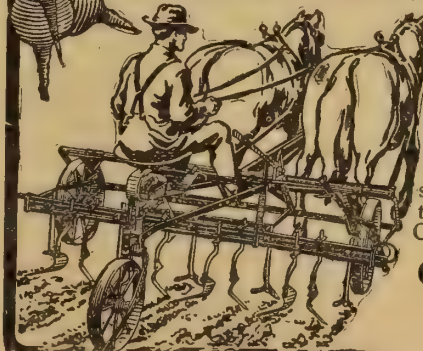
LANDES & COMPANY

Modern Machinery

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Planet Jr. Beet Cultivator

—greatest time- and labor-saver for beets and beans



This No. 3 Planet Jr 4-row Sugar-Beet and Bean Horse Hoe cultivates 4 rows of beets at a time, 18 to 22 inches apart. The patent shield hoes run close without covering plants or injuring roots. All steels, specially hardened, hold shape, keep sharp, and add 50 per cent to wear. Two styles of beet-cultivators—lower prices than ever before. Fully guaranteed. Come and get yours.

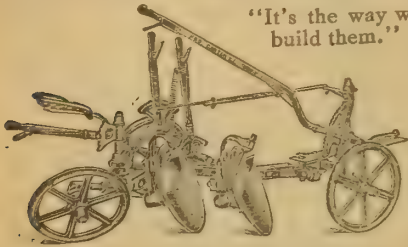
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No. 4 1/2

Disc Gang Plow

Built along simple lines, light in draft, efficient and durable. Made in 2 or 3 furrow, with 26 in. discs, though 24 in. discs will be furnished if preferred. The 2 furrow plow can be equipped with a Third Disc Attachment, or the 3 can be quickly converted to a 2. 4 horse eveners included.



"It's the way we build them."

Lever gives easy control of plow from seat, and operator is assisted in handling them by strong balance springs. Strong heavy beams, rigidly braced to withstand the strain to which a discplow is subjected. Hand control. Hitch is adjustable for tandem or abreast eveners. Discs are set in chilled bearings supplied with hard oil by compression grease cups. Discs can be set to cut 10 or 11 inch furrows. Angle of discs can be changed to meet varying conditions of plowing, an especially desirable feature in very hard or gumbo land. Extra adjustment for clearance in trashy ground.

Scrapers are large, of an improved pattern, and assist in throwing the soil over; they conform to the concavity of the discs, and are provided with ball and socket joint for close adjustment. Wheels are cast in one piece, and equipped with removable dust proof boxes with hard oil screw caps. Linch pins and collars, in addition to perfect axle bands, hold wheels in place. Loose bands behind discs prevent trash from winding around disc boxes.

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Be sure the sack of sugar you buy is labeled—

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HOME

HOME ECONOMICS

ASSOCIATIONS; PROGRAM

Demonstration—Invalid Cookery. Plans for Baby Week Campaign. A nation-wide baby week campaign is proposed to be held the week of May 1 to 6. If your association desires to hold such a campaign, let us know at once and we will send you the bulletin published by the Children's Bureau giving instructions for carrying out the work. The Utah State Board of Health will co-operate by supplying lecturers and lantern slides. Circulars may also be obtained from this source.

Points in Cookery for Invalids

Pay strict attention to cleanliness. Cook individual portions. Do not fry invalids' food. Do not use much fat. Do not over-sweeten.

Make out the day's diet in advance so that materials may be ordered and delays avoided. If possible let one person attend to the cookery.

Recipes Used by Mrs. Darling in Demonstration of Invalid Cookery

Egg with Tomato Sauce

1 egg—Boil 4 min. Remove shell carefully to leave egg whole. Serve with tomato sauce. Garnish with toast.

Tomato Sauce

1 tbsp. butter, 1 tbsp. flour, cream together. 1 c. tomatoes, 1 slice onion, 1/4 tsp. salt, paprika. Cook, strain, and add to butter and flour. Heat to boiling.

Egg in a Nest

1 egg white—Beat stiff and pile on circular piece of toast dipped in boiled salted water. Sprinkle with salt, make depression in center and slip into it. 1 egg yolk unbroken—Bake in moderate oven until delicately browned.

Chicken a la King

1 1/2 tbsp. chicken fat. 1 tbsp. cornstarch. 3/4 cup chicken stock. 1/2 cup milk. 1/4 cup cream. 1/2 teaspoon salt. 2 tbsp. butter. 2 cups cold boiled fowl. 1/4 pound sautéed sliced mushrooms. 1/4 cup canned pimientos cut in strips. 1 egg yolk. Melt chicken fat, add cornstarch and stir until well blended, then pour on gradually, while stirring constantly, stock, milk and cream. Bring to boiling point and add salt and butter, bit by bit; fowl, mushrooms and pimientos. Again bring to boiling point and add egg yolk, slightly beaten.

Cafe Mousse.

1 pint cream, whipped. 2 eggs. 1/2 cup strong hot coffee. 2-3 cup sugar. Beat yolks and sugar, then add hot coffee; when cold add beaten whites and whipped cream. Pack in freezer in salt and ice, using two parts of ice to one part of salt. Let stand 3 hours.

Jellied Chicken

1/2 tsp. gelatin—Soak five minutes in cold water. Dissolve 1 tbsp. cold water, in hot broth, 4 tbsp. strong chicken broth, hot, 2 tbsp. chopped cooked chicken, 2 tbsp. chopped celery. Season with salt, mold, chill, and serve on lettuce leaf or garnish with celery tips.

INVALID COOKERY

Orange Albumen

1 egg white—Beat with sharp knife. 1-3 c. orange juice—add gradually to egg and strain over ice. 2 tbsp. crushed ice. Sugar. Sweeten if necessary.

Egg Lemonade

1 egg—Beat slightly, add all ingredients. 2 tbsp. lemon juice. 1/4 c. cold water. 2 tbsp. crushed ice. Sugar or syrup. Strain over crushed ice.

Beef Tea

1 lb. round steak. 1 pint cold water.

Cut meat in small pieces or chop it, discarding all fat. Place with cold water in covered glass jar. Place in a saucepan of water just boiling. Keep at 140 degrees for 2 hours. Strain off liquid, season with salt. Serve in hot cup.

Cream of Celery Soup

1 c. milk, 3 stalks celery cut in small pieces, cook 20 minutes in double boiler. 1 tbsp. butter, 1 tbsp. flour, cream together and strain milk over it. Add seasoning and serve with 1 spoonful of whipped cream.

Orange Jelly

1 tsp. gelatin—soak in cold water. 1 tbsp. cold water. 1 tbsp. boiling water—Dissolve gelatin in it. 1/4 c. orange juice. 1/4 tsp. lemon juice, 2 1/2 tbsp. sugar. Combine with dissolved gelatin. Mold, chill and serve with whipped cream.

Junket Custard

3/4 c. milk, 1/4 tsp. brandy, 1 tsp. sugar, few grains salt. Heat to lukewarm. 1/4 Junket tablet, 1 tsp. cold water. Dissolve in water. Stir quickly into mixture. Pour into glass dish in which it is to be served. Keep warm until set, then chill.

Fricassee Oysters

1 qt. oysters—Drain and wash. 1/4 small onion grated into butter. 2 tbsp. butter browned in a pan. Add oysters, season with salt and pepper. Stir until edges are curled. 4 tbsp. butter, 2 tbsp. flour. Cook with oysters 2 or 3 minutes. 2 egg yolks—add chopped parsley—add as taken from the fire. Serve on toast or in pattie shells.

Oyster Roast

1 pint oysters—Drain and wash. Heat and season. 1/4 tsp. salt. A little paprika. 2 tsp. butter. 8 square crackers, toasted.—Lay in large enameled baking dish moistening with hot seasoned oyster juice. Lay three oysters upon each cracker. Dot with bits of butter, sprinkle with a little pepper and lemon juice. Set in hot oven about 8 minutes or until oysters are steaming hot and edges slightly curled. Sprinkle with chopped parsley and serve with slices of lemon.

RECIPES TAKEN FROM

"DAILY FOOD"

By Miss Edith Clift.

Raisin Nut Bread

1 c. graham or whole wheat flour, 2 c. rolled oats, 3/4 c. cornmeal, 2 tsp. salt, 1 tsp. soda. Mix together. 1 c. seeded raisins, 2 c. rich sour milk, 3/4 c. molasses. Mix together. Combine mixtures. Steam in one large mold 2 1/2 hours, or divide in three baking powder cans and allow less time. If used while hot cut with a string and the bread will not be heavy.

Nut Bread

2 1/2 c. white or whole wheat flour, 1/2 c. white sugar, 3 tsp. baking powder, 1/2 tsp. salt. Sift together twice. 1 egg—beat light, 1 c. milk. Mix combine mixtures.

1 c. chopped walnut meats—add to dough. Put into greased bread pan or three one pound baking powder cans. Let raise 20 min. Bake 45 min. in moderately hot oven.

Flour and Entire Wheat Nut Bread

3 1/4 c. entire wheat flour. 2 3/4 c. white flour. 1/4 c. sugar. 1 tsp. salt. 2 c. scalded milk. 2 tbsp. lard. 1 yeast cake softened in 1/4 e. tepid water. 1 1/4 c. chopped walnuts. Prepare and bake as you would white bread. This amount makes three loaves.

WHAT CONSTITUTES SUCCESS

"He has achieved success who has lived well, laughed often and loved much; who has gained the respect of intelligent men and the love of little children; who has filled his niche and accomplished his task; who has left the world better than he found it, whether by an improved poppy, a perfect poem or a rescued soul; who has never lacked appreciation of earth's beauty or failed to express it; who has always looked for the best in others and given the best he had; whose life was an inspiration; whose memory is a benediction."—Selected.

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Western grain-fed hogs make the finest hams and bacon known—especially if their ration consists of our—

High Protein Tankage

which is one of the best known foods for bone, blood and muscle building. It furnishes some essential elements not possessed by grains in sufficient quantity. Comes in 50 and 100 pound sacks. All good dealers.

OGDEN PACKING AND PROVISION CO.

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OR PAIN KILLER FOR THE HUMAN BODY

Gombault's Caustic Balsam

IT HAS NO EQUAL

For the Human Body
—It is penetrating, soothing and healing, and for all Old Sores, Bruises, Wounds, Felons, Exterior Cancers, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam cured my rheumatism more good than \$120.00 paid doctor's bills." OTTO A. BEYER
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When you answer the advertisements in this paper tell them you saw it in the Utah Farmer. Always buy advertised goods.

SPRING PREPARATION

OF BEET LAND

(Continued from page 1)

y, and he is much more certain of a good stand of beets.

Where a farmer does not have a spring tooth harrow, and does not feel like joining with his neighbors in getting one, splendid results have been obtained with a good steel frame reasonably fine tooth harrow, well harpened, putting plenty of weight on it, harrowing with it first lengthwise and then crosswise and going over it at least 6 or 8 times until the soil is thoroughly cut to a reasonable depth with a fine mulch on top. This is far better than spring plowing on heavy land.

I desire to present the foregoing to the beet growers for their careful consideration. They will, of course, have to use their own judgment in the matter, as I do not desire to influence them to follow a course that does not appeal to them, because a man is not likely to make a success of anything which he is not fully converted. I know that this method will work successfully if properly done and in the right season.

I want to emphasize again the necessity of this surface work being done early—just as soon as the soil can be worked and before a crust has had time to form on the surface of the ground. This is important for two reasons, first, when done early the crust will not form and the tools used will run deeper, and second, the moisture will be retained near the surface, which is very, very important. Many of our farmers do not fully realize the importance of retaining the moisture in the soil, so that if we have unusually dry weather they will still be reasonably certain of a good stand of beets.

Where the farmers prefer to plow their lands, they should be thoroughly plowed and gone over with a land at first, forming a fine mulch on top. This also should be done just as soon as the farmer can get on the soil successfully without injuring it. Then he will find the soil will plow much better, and instead of turning under a lot of dry surface soil he will turn over fine and moist soil which he will find to be most beneficial.

A great many of our farmers are as careful as they should be in the preparation of their seed bed and a great deal of labor and tonnage is lost because thereof. Therefore I want to impress upon our beet growers the necessity of early and thorough preparation of the soil for the seed, which is the foundation of the crop.

This is Important.

Every farmer should have his harrow and floater ready so he can use it at once. Just as soon as any part of your field is ready it must be done at that time. So work your ground as a mulch is left on top. Do not let any crust to form because it is very difficult to prepare the surface after crust is formed. If for any reason it is necessary to go over any part of your field twice or more it will pay to do it.

Prepare your seed bed as it should and you will be rewarded with a big crop that will pay for all the work put on it.

In addition to the above, I would like to suggest the following preparation of the spike tooth harrow for the work above mentioned.

Put two layers of wide wire netting over the teeth of the spike tooth harrow and pull it up tight to the inside of the frame, and wire it to the

frame with bailing wire so that it will not hinder the harrow from going into the ground. This wire netting, if properly put on, will help to thoroughly pulverize the soil and, being done all at once, it will stop the ground from clodding.

I will further suggest that the farmers take a plank, the length of the wooden harrow bar, put it under the bar, bolting it to the same, and stand on the plank. It will help to level the land and rub off the lumps, and will cause the harrow to draw deeply into the soil by setting the harrow as deep as possible and putting a little additional weight on the frame.

Every farmer should fix up his harrow in this manner, and this should be attended to at once so there can be no delay in this important work. The harrow fixed up this way would be an excellent tool to work spring or fall plowed land or land before it was plowed in the spring. Most of the beet and potato land will give far better results, as mentioned here before, if your surface work rather than plow, provided it is done at the right time and the right way.

I would like to suggest to the farmers, in the selection of their increased acreage, that if you have no potatoes or corn land and have to use grain land, use barley or wheat in preference to oat land, as beets follow wheat or barley better than oats. Just as soon as the grain land is dry enough, take a disc harrow and cut the stubble to pieces, mixing it up a little with the surface dirt, then run a harrow or leveler over it before plowing. In this way, the stubble will be turned to the bottom of the furrow and will plow better. The stubble will not bother the cultivation of beets, and will give a much better crop. This is very important and should be done while the soil is moist, and if properly done it will give excellent results unless the land is entirely worn out.

On lands where the beets were not dug last fall, by reason of their being frozen, a disc harrow should be used to cut them to pieces, follow closely with a float and fine tooth harrow to keep the land from drying out.

Some one has said that "a good dairy farmer is a good general farmer plus a love for cows." This is the situation in a nutshell. A good dairyman cannot be otherwise than a good general farmer. A good general farmer will make a good dairyman. It is for the above reason that the dairy herd enters so well into the most profitable and comparatively small general farm operations—Exchange.

HIS PROMISE

A Mobile man who was continually hard up had so many notes at the bank he could not leave town except on Sundays and holidays. He had a note falling due every banking day. He dropped into a bank one day and spoke genially to the president.

"I came in to fix up that little matter of mine," he said. "I'd like to renew it for a time."

The bank president had the note on his desk. He picked it up and studied it carefully. "Jim," he finally said, "I don't think this note is made out properly."

"Why not?" asked the alarmed borrower.

"It reads: 'I promise to pay'—not 'I promise to renew.'" — Country Gentleman.



Buy a Farm In Richland Acres

THE BEST FARMING LAND IN CACHE VALLEY. TILE DRAINED land is best because—

- The ground is better drained
- Plowing can be done earlier
- Cost of operation is often 20% to 50% less
- The root area is increased
- The soil is warmer and deeper
- The crops are bigger and better
- Sanitary conditions are first class.

ASK THE MAN WHO HAS DRAINED HIS LAND

For information and terms write to

Logan Land & Drainage Company
LOGAN, UTAH.



ONE OF A THOUSAND

"I never was a great friend of the shovel and since I have used the MARTIN, the shovel and I have entirely dissolved partnership." F. H. Lytle, Pioche, Nev.

DITCHES!

—Make the NEW and clean the OLD with the MARTIN Ditcher, Dyker and Grader. It makes or cleans irrigation or drain ditches up to 4 feet deep, any width. Builds dykes; grades roads.

THE Martin Ditcher and Grader

is guaranteed to do more and better work than 50 men with shovels. Works in sand, clay, gumbo or rocks—wet or dry; on side hill or on level ground. Made in 2, 4 and 6-horse sizes.

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Adjustable for wide or narrow cut. No wheels, levers or breakable parts. Cost low. Up-keep nothing.

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trial to everybody. Write today for catalog, with full particulars and introductory offer on new 1917 Models.

POULTRY

LIME WATER FOR

KEEPING EGGS

Frank T. Shutt.

Experiments in egg preservation were begun at the Experimental Farm Ottawa, in 1898, and have been continued every season since that date. In the course of these experiments, trials have been made with more than twenty-five different fluids and preparations that have been proposed or sold as egg preservatives. The work of these fifteen years has shown the superiority of lime water over all other preservatives which we have tested. Closely following lime water is the so-called "Water-glass" or Sodium silicate. Both, according to our results, have proven effective preservatives, but it may be remarked that it is useless to expect that either can entirely arrest that "stale" flavor commonly found in all but strictly fresh laid eggs.

The solubility of lime at ordinary temperatures is 1 part in 700 parts of water. Such a solution would be termed saturated lime water. Translated into pounds and gallons, this means 1 pound of lime is sufficient to saturate 70 gallons of water. However, owing to impurities in commercial lime, it is well to use more than is called for in this statement. It may not, however, be necessary, if good, freshly burnt quicklime can be obtained, to employ as much as was at first recommended, namely, 2 to 3 pounds to 5 gallons of water. With such lime as is here referred to one could rest assured that 1 pound to 5 gallons (50 pounds) would be ample, and that the resulting lime water would be thoroughly saturated. The method of preparation is simply to slake the lime with a small quantity of water and then stir the milk of lime so formed into 5 gallons of water. After the mixture has been kept stirred for a few hours it is allowed to settle. The supernatant liquid, which is now "saturated" lime water, is drawn off and poured over the eggs, previously placed in a crock or water tight barrel.

As exposure to the air tends to precipitate the lime (as carbonate,) and thus to weaken the solution, the vessel containing the eggs should be kept covered. The air may be excluded by a covering of sweet oil, or by sacking upon which a paste of lime is spread. If after a time there is any noticeable precipitation of the lime, the lime water should be drawn or siphoned off and replaced with a further quantity newly prepared.

It is essential that attention be paid to the following points:

1. That perfectly fresh eggs only be used.

2. That the eggs should throughout the whole period of preservation be completely immersed.

Although not necessary to the preservation of the eggs in a sound condition a temperature of 40 degrees F. to 45 degrees F. will no doubt materially assist towards retaining good flavor, or rather in arresting that "stale" flavor so often characteristic of packed eggs.

Respecting the addition of salt, it must be stated that our experiments—conducted now throughout fifteen seasons—do not show any benefit to be derived therefrom; indeed, salt frequently imparts a limey flavor to the egg, probably by inducing an inter-

change of the fluids within and without the egg. Our advice is, do not add any salt to the lime water.

Water glass (sodium silicate) has been extensively experimented with, using solutions varying from 2 per cent to 10 per cent. On the whole, solutions 2 per cent to 5 per cent (2 pounds to 5 pounds sodium silicate in 10 gallons of water) have given better results than stronger solutions. Although in the main the results have been fairly satisfactory, we are of the opinion that lime water is superior as a preservative. Further, lime water is cheaper and pleasanter to use than water-glass solution.

This is apparently a misnomer, as glycerine, so far as the writer can learn, is not used in the process, which consists of momentarily (say about 5 seconds) dipping the eggs (which have been pickled" in lime water) in dilute muriatic acid, between 1 per cent and 2 per cent. This acid dissolves any incrustation on the shell and gives the eggs a fresh appearance, i. e., as if they had been treated with glycerine. Immediately on withdrawing the eggs from the acid they are well washed with water, as by a hose, to prevent further action of the acid, and dried. This immersion in acid lessens the tendency by shell cracking when the pickled egg is boiled. Eggs should not be subjected to this treatment till about to be used, since the keeping quality of the egg is materially affected by the process.

The addition of glycerine to various egg preservative fluids has been tried at the Experimental Farm, but in no case did it prove satisfactory. The general effect was to induce the growth of mold.

EXPERIENCE WITH SUDAN GRASS

Providence, Utah.

Utah Farmer:

In your issue of 27th January, Raphael Strange, of Scipio, asks whether "Sudan Grass could be raised successfully in that part of the country on dry land, and how much to sow per acre and what time of the year to sow it?" Also in your issue of the 3rd inst. G. D. Wilsey of Eureka, wishes "information covering the best forage crops for dry land farming," and asks for data on hand concerning Sudan Grass. Permit me to relate my experience.

I sowed Sudan Grass in rows, at corn planting time in May, on a dry gravelly upland. The plants came up fine and made a vigorous growth until they were four feet high, when the heat and dry weather brought them to a standstill. Seeing the crop would be valueless without moisture, I immediately furrowed the rows and gave them an irrigating. This started the plants to growing again and they reached a height of 7 to 9 feet early in August, when they were cut for hay. A second growth began at once, which reached a maximum of 7 feet in height but had to be watered when about a foot high, as the plants were shriveling with the dry weather.

I draw from my experience that Sudan Grass would be worthless as a forage crop in Utah, even on irrigated soils; that its yield in fodder, per acre would be less than ordinary field corn, and that the annual labor required in preparing ground, growing seed and replanting would be ill-repaid by the harvest returns. In its

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original African habitat, soil and climatic conditions combine to produce from Sudan Grass a valuable stock nutrient, but the hot sands and moist subsoil of Africa, with its long growing periods and exemption from frost, are wanting in Utah and this plant can never become here a profitable experiment. On absolutely dry lands I believe it would be a complete failure. The cured product is exceedingly sweet and nutritious and is devoured ravenously by all kinds of stock. In the experiment mentioned above about ten pounds of seed to the acre was used.

Joseph A. Smith.

625 Acre Stock Ranch in Summit County. Good 8-room house, barns, and dairy houses for cows, milk house and separate milk sheds, good implements, wagons, buggies, etc. 100 head good cattle, 2 good teams, harnesses, 20 head hogs, splendid range land adjoining. Close to grade and high school. One of the best markets in the State (Park City) \$31,000—good terms.

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	E. C. BLANPIED	
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SUGGESTIONS FOR HORTICULTURIST

(Continued from page 3)

if we expect to bring this industry
up to the standard of our neighbors
on the Pacific Coast. After all it is
the heavy consumption of fruit that
we must have in order to insure the
demand necessary to handle our crops
successfully. It is a well known fact
that the price our fruit sells for is
entirely controlled by supply and de-
mand. The more avenues of con-
sumption we have the greater will
be the demand.

For a number of years this in-
stitution has stood alone in furnish-
ing the opportunity for the fruit grow-
ers of this state to get together and dis-
cuss the problems connected with
horticulture. It is at these meetings
that the problems of this great in-
dustry can be debated and voiced by
the members and we hope the present
and future problems may have the
same careful and earnest consider-
ation that has characterized our de-
liberations of the past.

WHITEWASH MIXTURE

For general use about the farm
buildings to assist in destroying in-
sects, the following recipe for white-
wash is offered by the College of
Agriculture: Slake 5 quarts of lime
with hot water to about the consist-
ency of cream. To this add 1 pint of
zenoleum or some other coal tar
product, and one quart of kerosene.
Dilute with about its volume of water;
apply with a brush or a pump. This
solution when properly applied ac-
complishes three things: (1) Zenoleum acts as a disinfectant by
killing disease germs; (2) the kero-
sene aids in destroying mites; and
(3) the lime whitens the house.

Man in a way resembles an apple in
that he is never a complete man ex-
cept as a whole apple, that is, with
his other half, the woman. There is
one trouble with some modern Eve's.
They wish to eat all the apple.

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Crop Rotation

The individual likes a variety of food. The animal is most thrifty and makes best feeding gains when a "balanced ration" is fed. Most of us are learning that our human food requirements are just as important for consideration as is the balanced ration that determines profit or loss in feeding a bunch of steers or a lot of pigs.

Many people do not realize that crops must feed in order to produce yields. The "balanced ration" for crops has a place in our consideration that is just as important as the balanced ration for steers and pigs.

When successive crops of beets are grown for a series of years, two things are certain to happen. Some of the necessary elements of plant food are exhausted or greatly reduced in a way that throws the growth of the crop out of balance and the second misfortune that must certainly follow in the wake of continuous crops without rotation is losses that will surely come through insect pests and disease.

Three elements of plant food are absolutely necessary for all crops. Viz.; Nitrogen, phosphorous and potassium. Other elements are also required but they are usually found in sufficient quantities that they do not become a limiting factor in crop production.

When any one of these elements are lacking or is reduced out of proper proportion to the other two elements, it then becomes a limiting factor and profitable crops is threatened.

The food requirements for profitable crops of beets are different from the requirements for a crop of oats or barley or wheat. A crop of alfalfa requires a different proportion of plant food elements than does the crop of corn.

Then, too, the physical effect upon the soil through continuous single cropping is bad.

The value of alfalfa, clover, beans, peas or other leguminous crops upon the soil, as one of a series of crop rotation is greater than can be measured by their ability to add nitrogen in an available form to the soil for the succeeding crops. The vegetable matter that is added to the soil by plowing under forage or tops and the decaying of roots supplies organic matter that greatly improves the texture of the soil and promotes the capillary movement of moisture that aids in passing the excess moisture from the surface soils to the subsoil, after excessive rains or irrigation and makes it possible for the growing crop to draw upon this reserve supply of moisture during dry periods.

The regulation of soil moisture is imperative, if maximum crops are to be had. Air and moisture are necessary for the liberation and rendering available of the mineral elements of plant food. Growing crops can take up potash only as it becomes available in a liquid form and that liquid form means what it termed "film moisture" or a condition that the tiny rootlets can utilize. The same is true of other forms of soil fertility. Decaying manure and other vegetable matter not only furnishes available fertility to the soil but decomposition also greatly aids in rendering this fertility available through the breaking down of mineral particles in the soil.

When these different elements become an available form of crop fertilizer, it is readily understood how an excess amount of surface moisture can carry away valuable crop producing

properties, through leaching or washing.

Aside from improving the physical condition of the soil and also rendering the soil more fertile, rotation would be entirely worth while as a means of eradicating or holding in check the diseases and insect pests that now claim heavy toll from our different crops.

Practically all sugar beet diseases can be held in check through a sensible rotation. The nematode has become a menace to the sugar beet crop in several districts. There is much yet to be learned about this pest but the best practice now seems to be a rotation that means, alfalfa, clover, corn, barley, timothy or wheat. In California, beans seems to enter safely into rotation with beets in holding the nematode in check. Thus far, the indications are

that potatoes, tomatoes and oats serve as a host to the nematode and therefore, these important crops, which, ordinarily belong in a sugar beet rotation must be avoided on fields that are known to be infested with the nematode.

Occasionally, we find fields that continue to produce profitable crops of beets several years in succession.

Occasionally, we find men who live to a ripe old age even though they drink whiskey continuously. Both practices are dangerous.

Rotation is a sensible way of combatting the alfalfa weevil.

Rotation is a sensible way of combatting practically all sugar beet pests.

Rotation is a sensible way of balancing the farm crops, thus insuring diversity of feed for live-stock and also cash crops that may be sold.

Rotation is a sensible way of improving and maintaining soil fertility.

Rotation and diversification distributes the season's work and minimizes crop failure risks.

Farmers' Bulletin 772, U. S. Department of Agriculture on "Control of The Sugar Beet Nematode" can be had without charge by addressing James W. Jones, Agriculturist, Sugar Beet Investigations, 418 Federal Building Salt Lake City, Utah.

Start your incubators. It's the early birds that catch the worms. The early pullets lay the eggs when "eggs is eggs."

Overhaul the harness. Give them an oil bath and get them ready for spring work. Leataer is getting scarce and dearer.



Concrete Road Near Ogden, Utah.

Concrete Roads Are Both National and Local

Concrete roads are national because they are used in all parts of the country. Practically every state in the Union is represented. Some states have built several hundred miles. Counties have also gone into extensive concrete road building. Hunt County, Texas, has 24 miles of concrete roads, Baltimore County, Maryland, will have 43 miles at the end of the present year; Milwaukee County, Wisconsin, 111½ miles, and Wayne County, Michigan, 156.7 miles. Vermilion County, Illinois, is building 144 miles. All are concrete.

Concrete roads are truly local. Home labor is used in their construction. The bulk of the material—sand, pebbles or broken stone—is generally found within the county. Utah County owns its material pits. The third material—Portland cement—is manufactured in the state of Utah. Labor must be hired. It will come from the county. Teams must be hired. Farmers' teams otherwise idle will earn money for their owners. Money invested in a 50 mile concrete road in Utah County will remain at home and the County will have the benefit of a modern durable road. Further, the annual cost for paying off the bonds will be little, if any, more than that now spent in trying to keep the present roads in fair condition.

Service Given by Concrete Roads

When you travel along a concrete road there is no chance of getting "stuck in the mud." In dry weather you are not covered with a cloud of dust by every passing vehicle. Being free from holes and ruts there is no chance of having springs and axles broken. The rigid, even, gritty surface gives a good hold, makes riding comfortable and prevents skidding of automobiles. A road from one end of the county to the other would provide a means of visiting your friends and of going to town any day in the year.

Let us give you facts. A small booklet, interesting to read and fully illustrated will be sent upon request. Ask for a copy of booklet No. 136, entitled "Concrete Facts About Concrete Roads." Read it, have your neighbor read it, and then let your road officials know that they will have your support for concrete roads.

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THE **UTAH FARMER**

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 32 LEHI AND SALT LAKE CITY, UTAH MARCH 10, 1917

Important Factors in Dry-Farming---Selecting a Farm

By J. W. Paxman, Specialist in Dry-Farming for the Utah Agricultural College.

Over two score years ago dry-farming was practiced in a limited way on some small areas in Northern Utah, but not until twelve or fifteen years ago did it receive much consideration on the part of the farmers. The valuable experiments then conducted by the Agricultural College brought dry-farming into prominence and gave birth to its propaganda as a system of scientific farming. The system has developed with some more conservatism than in some of the sections east of Utah, but it has grown with steady pace, fixing its methods, and establishing its principles as the years rolled by, until today it is so firmly established, and so largely developed, that most of our choicest lands, a few years ago considered valueless, are occupied with settlers. There are, however, many thousands of acres of good lands in desirable sections yet open for entry, and to those desiring to avail themselves of lands for the purpose of cultivating them and growing profitable crops, this article may be of some benefit.

Dry-Farming Defined.
There are many desiring to obtain lands who are unfamiliar with the requirements for success in dry-farming. Dry-farming does not imply that agriculture can be successful without water; it simply means the employment of methods by which a limited amount of precipitation can be economically used in the production of crops. All plants require water for their growth and the system of dry-farming provides a means by which the natural precipitation may be conserved in the soil and made available for use of the plants—to prevent all unnecessary loss of water, since water is the limiting factor in crop production on our dry-farms.

A Sufficient Rainfall Needed.
In selecting a dry-farm the first essential to be kept in mind is to get into a region where there is sufficient rainfall to serve the growing crops.

Where other climatic conditions and the soil are favorable, a twelve inch rainfall during the year may prove sufficient, and if the soil is exceptionally rich, may prove ample for the production of profitable crops, but much better results can be obtained if it is eighteen to twenty inches. Under ordinary conditions it is considered

too, should receive careful study for it varies considerably in different regions, coming at different times of the year, and depending on the condition of the soil, the amount of evaporation and a number of other factors, all having their influence on the effectiveness of the moisture. Under one condition, twelve inches

free period is too short to make it safe for the maturity of the plants. All these climatic conditions should be taken carefully into account in selecting any section for a dry-farm.

Lands Suitable.
While we cannot get away from the fact that the soil lies at the base for all successful farming, not all lands are suitable for dry-farming even if there is seemingly a plentitude of moisture.

We must look for those lands that are naturally fertile and into which the moisture can be incorporated and held from one year to another. In general, fertile soil—the soil that is capable of producing crops—has the quality and capacity of holding moisture, but there are some soils coarse in texture, and loose and porous in character, which will produce under irrigation but which are not capable of retaining or holding over a sufficient amount of the rainfall for the growing crops.

The soil to be sought is one first of all, that has good fertility, with plenty of plant food material. The surface should be rather fine grained and loamy, so that it is friable and easily handled. The more humus (decayed vegetation) it has incorporated in it, the better. It should be light enough to work well and yet have the "body" in it to pack or refirm itself when cultivated. It can be rolling or plain so long as it is free from rocks or other obstacles which would interfere with cultural methods.

The subsoil should be deep and even in structure. That is it should not be variable, having strata of gravel and free sand, but be of a good firm earthy material, preferably a fine textured clay soil running constantly eight to twelve feet deep. This fact should be borne in mind, that the surface twelve to fifteen inches acts as the temporary reservoir and should be loose and light enough to catch the rains and hold them until they can percolate into greater depths. The

(Continued on page 4)



Utah's undeveloped acres are being brought under cultivation by the modern methods of dry-farming. Our production of grain has been greatly increased by this method of farming.

hazardous to risk dry-farming with a less yearly rainfall than twelve inches. The prospective dry-farmer is therefore warned against selecting a location anywhere, without careful investigation and expert advice, unless he knows the annual precipitation is above twelve inches.

Once in a while there is a success reported with less rainfall, but the successes are not constant—they are the rare exceptions. Our climate is too arid to run the risk of expending money and energy in such regions. The effectiveness of the rainfall,

of rainfall may be more effective than eighteen or twenty inches under another. In general, however, twelve to fifteen inches, is considered sufficient to make the practice of dry-farming safe, when the whole amount is properly conserved for use of the crops.

We must take into account always the moisture dissipating effects of the winds and the aridity or dryness of the air. The hot dry winds that prevail in some sections adds very materially to the risk in dry-farm practices. In other sections the frost-

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Every normal person is.

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will help the young man to find his place in the world and make the most of himself.

The industrial demands of modern life are explained and the reader is shown how he can meet these demands. The opportunities and requirements in each kind of work are discussed in such a way that the young man is materially aided in selecting his life's work and in preparing himself for it.

Order one Today, just \$1.25.

THE UTAH FARMER
Book Department

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UTAH

Send for a seed catalogue and select your seeds now.

IRRIGATORS' QUERIES ANSWERED

O. W. Isrealson, U. A. C.

Discussing again the question which was brought up in the last number of the Farmer, I would like to ask your suggestion as to how one can prevent seepage water from the higher land? My neighbor, who owns the land above me argues that he does not apply water over a longer period of time than what is necessary to cover the surface; but notwithstanding this, large quantities of seepage water come to my land each time he irrigates. How can this situation be modified, or corrected?

This, undoubtedly, is the most difficult question which has come up for consideration. It is believed that irrigation on higher lands might very well be improved, so that the seepage water would be very much decreased, if not entirely eliminated. Probably the first step necessary in attempting to solve this problem, would be careful measurement of the water used on the higher land. If the higher lands are gravelly, and it is found that more than five or six inches of water are applied in each irrigation, in order to cover the surface, one may be warranted in saying that the irrigation method should be so modified as to decrease the requirement each time water is applied, since seldom, if ever, can shallow, gravelly, soil hold more than probably half this amount of water. In this connection there is undoubtedly great need for further careful study and investigation of the water capacity of such soils. It is believed that the State should take this matter in hand, and probably pass some law providing that applications of water greater than a certain depth—say six or eight inches—should not be made to such lands at one time.

PLANT SWEET PEAS NOW IF YOU WANT RESULTS

M. F. Ahearn

Now is the time to plant the sweet peas. These flowers are easily grown if the soil is properly prepared and good seed is used.

"Germination may be hastened by soaking the seeds in warm water before planting. The trench method is considered the most successful way of planting. The trench should be from six to eight inches deep and a foot wide. The bottom of the trench should be turned and well rotted manure worked into it. Firm the soil, and plant the seeds in the bottom of the trench in two rows, six inches apart, one seed to an inch in the row.

"The pit should be left open until the plants appear and should be filled gradually as they grow. This encourages the development of long roots and gives the plants the ability to withstand the hot summer months. If the weather is cold when the plants first appear, the pit should be partly filled with dry leaves to protect them until the warm weather. Thin the plants to a distance of three inches.

"A trellis should be provided for the vines. It may be made of wire netting, cross bars being nailed between the uprights for support. A netting that sags causes injury to the vines and is unsightly. The trellis should be from four to six feet high. The tips of the vines should be clipped when they attain a height of six feet. More blooms will follow each picking."

Variety in the dairy cow's ration adds a great deal to its effectiveness, making it more palatable. It is worth while to give cows feed they like.

High Prices Will Continue during next year.

It will be to your interest to produce the biggest crops possible, both in field and garden. Our catalogue tells all about Vogeler's Purity Seeds.

SEND FOR A FREE COPY

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L. D. S. Spring Conference

AT

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APRIL 4th to 8th Inc., 1917

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Salt Lake Route



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Utah Station as Follows:

Nephi, Eureka, Mammoth, Silver City, and points East, April 3rd to 8th inclusive. Good returning until April 12th.

All other points, on sale April 2nd to 7th inclusive. Good returning until April 15th.

Extra Accommodations Will be Provided.

See your agent for tickets and further particulars.
Wm. Warner, A. G. P. A., Salt Lake City, Utah.

Some men will always be men, it is useless to try to make angels out of them.

PAST TENSE

Hearing a crash of glassware one morning, Mrs. X. called to her maid in the adjoining room: "Norah, what on earth are you doing?"

EAR PERFECT TAGS
Samples Free
ATTACHED INSTANTANEOUSLY
Name and Address. Numbered if Desired
LEG BANDS for Poultry, Pigeons, Turkey
SALT LAKE STAMP CO. Salt Lake, Utah

"I ain't doin' nothin', mum," Norah replied—"It's done."

Successful Farming and Sugar Beet Growing

By N. I. Butt, Assistant Agronomist, Utah Experiment Station.

It requires considerable judgment to manage a farm that it will pay the farmer a labor income better than that of a good workman. Those who are ambitious, however, may learn the methods of the better farmers and the principles involved in successful farming because such knowledge has been collected in numerous places and under almost every condition. These factors of success work no matter who uses them. There is doubt about the profitability of any phase of farming, this doubt should be removed if possible by seeking the advice of those who have had experience along that line.

Are sugar beets a paying crop? Do beet growers earn more than those who raise none? Should sugar beet growers have a large farm? How much of the land should be devoted to beets, and numerous other questions are being asked by farmers throughout the sugar beet producing part of the state since the recent startling rise in the price paid for the beet crop. If it were ever a profitable crop it should now be almost a literal gold mine.

It is hoped that some of the more pertinent questions of the older sugar beet growers as well as those who are about to enter this field may be answered by the following figures and discussion. These data have been collected from sugar beet growing parts of Cache, Salt Lake, and Sevier Counties, Utah. They may therefore fairly represent the sugar beet industry in the state.

above \$2,000, those between \$1,000 and \$2,000, between \$500 and \$1,000, between 0 and \$500, and those making less than nothing for their labor. As would be expected because of

Getting Moisture Into the Soil For Good Corn Yields

Corn gets what it takes from the soil in liquid form and, therefore, there must be moisture to spare. The actual number of inches of rainfall on a given field, however, is not alone a safe guide, especially in droughty

these factors that more water can be made available to the growing crop. There are loose, open soils through which water purs as through a sieve, and there are tight, gumbo soils, which swell when the surface is moistened and become practically waterproof. Sandy soils take in water more readily than heavier soils; hence, less precaution is necessary to prevent run-off.

The greatest loss may be from seepage to depths beyond the plant roots. Manure and decaying vegetable matter check seepage and improve soils of this character. As corn roots penetrate 3 to even 6 feet deep, larger yields of corn are frequently raised on sandy soils in semiarid regions than on surrounding hard soils.

The heavy, hard, or close-textured soils require the most cultivation to keep them in proper condition so as to prevent moisture loss from run-off and evaporation. Unless the surface is kept broken or somewhat rough, but little water will be absorbed during hard rains and a greater loss will occur from evaporation. To maintain the surface soil in proper condition, cultivation is necessary soon after heavy rains. If cultivation is too frequent, however, so that the surface becomes too fine, moisture can not penetrate readily and blowing of the soil is likely to occur.



SEGIS TAYNE JOHANNA 114658. She produced in seven consecutive days 730.8 pounds of milk containing 50.68 pounds of butter. She was milked every six hours. She is eight years old and weighs 1,450 pounds. This is a world's record and shows what it is possible for a good cow to produce.

the larger number raising beets, the labor income of the farmers growing beets is higher than those without it.

regions, as much depends on the amount of water that is stored at different seasons; the amount that is wasted in run-off, evaporation, or seepage; and, finally, the amount actually made available to the root system of the corn. It has been estimated that a rainfall of 10 inches will be sufficient to produce a 50-bushel yield of corn, provided none of it escaped except through the plants. Even weeds, however, can not take over every bit of moisture and it is impossible under field conditions to prevent losses.

Caution is therefore given to corn growers in droughty regions (1) to plan their cultural operations so as to have the soil surface in best condition to take in water when rains are most likely to occur; (2) so to handle the soil that deep penetration may be secured; and (3) so to cultivate the soil as to store up heat and at the same time prevent excessive loss of soil water through capillary action and surface evaporation.

The ease with which soils take in, retain, or lose moisture depends mostly on their texture, physical condition, and surface slope. It is to the extent that cultivation can modify

It is of great importance that moisture be made to penetrate several feet below the surface. In most soils this penetration is slow, and during hot, dry weather surface evaporation is great. Surface moisture can not penetrate a frozen soil. Summer and fall precipitation has time to penetrate several feet deep and be in a position to support a growing crop the next summer. While it is seldom advisable to waste a whole summer in storing moisture for a corn crop the next year, it is advisable to begin storing moisture for a corn crop the preceding crop will permit. The ideal seed bed for a good corn crop in semiarid regions is one with a loose, coarse surface and a subsoil well filled with moisture to a depth of several feet.

Preparing Land for Planting.
As lack of moisture, more than anything else, limits corn yields in droughty regions, the first question regulating each operation should be, "What will be its effect upon the soil moisture supply?"
While summer fallow frequently results in greater yields of corn, the practice has not proved practicable. Therefore, begin the preparation of land to prevent loss of moisture and to put the surface into condition to receive moisture as soon as the pre-

TABLE SHOWING THE RELATION OF SUGAR BEETS TO SUCCESSFUL FARMING. RESULTS FROM 276 FARMS IN CACHE, SALT LAKE, AND SEVIER COUNTIES, UTAH.

Labor Income		Number Farms Reported	Acres of Land				% Farms Raising Beets	Acre Yield Beets	Farm Income From		Number Crops Raised
Limits	Average		Total Farm	In Beets	% Land Beets	Crops			Stock		
FARMS RAISING BEETS											
\$2,000 -	\$12,438	13	539.7	16.88	3.13	86.7	13.12	\$3,083	\$17,044	6.15	
to 1,999	1,430	44	107.5	11.19	10.41	84.6	14.53	1,384	1,999	5.55	
to \$999	691	42	70.1	8.96	12.78	67.7	14.15	1,026	785	5.61	
to \$499	270	60	60.8	6.59	10.84	63.2	12.44	633	514	5.18	
than 0	-199	28	42.1	5.95	14.13	53.8	12.37	606	322	5.57	
FARMS NOT RAISING BEETS											
\$2,000	6,025	2	2661.5					430	11,094	4.50	
to \$1,999	1,371	8	128.0					1,328	643	4.50	
to \$999	769	20	76.5					960	584	6.70	
to \$499	216	35	70.1					414	780	5.49	
than \$0	-459	24	155.6					671	481	6.33	

Importance of this crop to the farmers in these places may be seen in the fact that of the 276 farmers reporting, 187 grew beets. Also the fact that the farmers appears in the larger acreage and smaller percentage of the land growing beets in the counties where the yields are low. For convenience the farms have been divided into those with labor incomes

Only for the one group did the non-beet growers get as much for their work as did the beet growers and there is a very wide difference in favor of the latter when we compare the best and the poorest of the two. The percentage of the total number of farms raising beets in each class decreased as the profits from the farm decreased. (Continued on page 11)

(Continued on page 14)

Dairying

CHURNING

The factors affecting the length of churning may be placed under three heads. The first of these are the factors pertaining to the production of the milk and cream from which the butter is made. These are as follows:

1. Breed of Cow—The fat globules in the milk of different breeds are not the same size. Those of the Jersey and Guernsey breeds are larger than those of the Holstein and Ayrshire breeds. Since cream containing large fat globules will churn more readily than that containing small globules, cream from Jersey and Guernsey milk will churn more easily, other conditions being the same.

2. Stage of Lactation—Toward the latter part of lactation the fat globules become very minute, and hence cream from stripper's milk churns with difficulty.

3. Season of the Year—In the winter time it is natural for the fat in milk and cream to become chilled, and there is usually little or no rise in temperature during the churning process. Hence, cream does not churn as easily in the winter time.

4. Feed—A ration without any succulence in it, such as corn silage, beets or beet pulp, is conducive to the production of hard butterfat globules, and hence to difficult churning.

5. Size of the Herd—Difficult churning occurs most frequently when the herd is small, one to five cows. In the small herd, the factors above mentioned are apt to play an important part. The individuality of the cow is to be reckoned with in the case of the small herd. The cream from certain individuals may always churn with difficulty. When the cream comes from mixed milk of a larger herd, the variations due to individuality are covered up.

6. Thickness of Cream—Cream that tests 20 per cent or less churns with greater difficulty than a 30 to 35 per cent cream, simply because the butterfat particles are nearer together in the 30 per cent cream. One should aim to make a 30 per cent cream for butter-making. Without a separator, this is, of course, impossible, and a man without a separator is more liable to experience difficulty in churning at various times. Too thick cream is not desirable, as it sticks to the churn and churns with difficulty.

Next comes the factors pertaining to the handling of the cream, divided as follows:

1. Bacterial Contamination—It happens sometimes, although cases are rare that cream becomes contaminated with certain ferments which cause it to froth and foam, and makes churning an impossibility.

2. Sourness of Cream—Although sour cream looks thicker than sweet cream it is less sticky, and the fat globules come together into butter more easily from sour cream than from sweet cream.

3. Churning Temperature—In all probability a large proportion of the cases of difficult churning are due to the fact that the butter maker does not possess and use a good dairy thermometer. No definite churning temperature can be given to apply to all cases. In general, on the farm, the churning temperatures should be 52 to 55 degrees F. in summer, and 58 to 65 degrees in winter.

Third are the factors pertaining to the churning process, as follows:

1. Type of Churn—The churn should be of the barrel or combined type and be so built as to give proper concussion. In case of the barrel churn, the staves should be nearly straight, or else cream will flow around in the churn rather than rise and fall.

2. Fullness of the Churn—To secure best results, the churn should never be filled more than one-half full of cream. To get butter to come, there must be concussion. There is no room for it in the churn that is too full. Neither will the butter come easily in a churn that has but very little cream in it, due to the fact that cream simply coats and sticks on to the sides of the churn.

3. The Speed of the Churn—The speed should be such that the cream can be heard to rise and fall with each revolution of the churn. Too slow speed means that the cream simply flows from one end of the churn to the other, while too fast speed means that the cream is held stationary in one end of the churn.

More often a combination of some of the factors above mentioned cause difficult churning. For example, a man with one cow, well advanced in lactation, in the winter time, raising cream by gravity, feeding corn stover, timothy hay, gluten and bran and churning in a churn that is large enough to accommodate the cream from five cows certainly is in a bad predicament, and has reasons enough why his cream doesn't "come."

The remedies can be read in the causes as they have been stated. Some have reported that scalding the milk before separating it overcomes the trouble. No experimental work is reported to prove or disprove the effect of this treatment.—H. F. Judkins.

IMPORTANT FACTORS IN DRY-FARMING

(Continued from page 1)

subsoil is the permanent reservoir and must be capable of holding and retaining large quantities of water if we expect to get good crops. So then we say a rather compact clay and silt soil for eight to twelve feet will provide the best reservoir capacity.

Lands Unsuitable to Dry-Farming.

In selecting a dry-farm it is well to avoid the following: The lands with a heavy compact clay surface; those with gravel or sand strata within eight feet; lands that show excessive mineral, alkali lands; lands with a loose and porous surface or subsoil; gravelly lands, coarse sandy lands; lands with a light sandy surface; shadscale and greasewood lands, unless first passed upon by an expert, as most of such lands in Utah are unsafe for dry-farming—few of them only respond favorably.

An Almost Infallible Guide.

It is a noticeable fact that the lands giving a good, vigorous and thrifty growth of sage brush, have almost invariably made splendid dry-farms, so that we have come to recognize the sage brush as a symbol both for fertility and climatic requirements for successful dry-farming.

Rabbit brush lands and those producing native and prairie grasses in good quantities, also are usually safe and give splendid results.

Dry-Farm Sections.

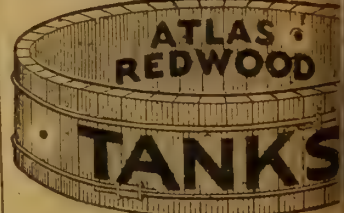
Some splendid undeveloped dry-farm lands are in the following sections:

San Juan County; Center and West Box Elder County; Tintic Valleys, Juab County; East Washington Washington County; East Iron County; East Iron County Knab, Kane County; East Millard County; John's Valley, Garfield County; Hatch, Piute County; Cedar Valley, Utah County, West side Rush Valley, Tooele County; and a number of other smaller areas.

The lands skirting the hills and bench lands usually respond better than the valley or plain lands.

BLACK LEG

LOSSES SURELY PREVENTED by CUTTER'S BLACK LEG PILLS. Low priced, fresh, reliable; preferred by western stockmen, because they protect where other vaccines fail. Write for booklet and testimonials. 10-dose pkg. Blackleg Pills, \$1.00. 50-dose pkg. Blackleg Pills, \$4.00. Use any injector, but Cutter's simplest and best. The superiority of Cutter products is due to years of specializing in VACCINES AND SERUMS. ONLY INSIST ON CUTTER'S. If unable to order direct, The Cutter Laboratory, Berkeley, Calif.



"The Tank that Lasts a Life" A FULL STOCK OF STOCK AND STOCK WATER TANKS CARRIED IN STOCK BY GREEN MACHINERY MANUFACTURING Machinery Merchants & Manufacturers American Building, 338 South SALT LAKE CITY, UT

Summer Knit

The stocks are good now. Order them direct from the manufacturer and save money. Underwear, Hosiery, Linen, Sweaters, Bathing Suits, etc. We specialize in approved garments.

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If you want money, drop us a line.

We loan on first mortgages on Utah farms or Salt Lake City real estate at reasonable rates.

Prompt action and fair treatment if you do business with us.

Palmer Bond & Mortgage Co.

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AGE SIZE ORGANIZATION SERVICE

Each is reason for you to do business with this bank.

There are many other reasons.

If you wish to know some of them, ask our customers.

Walker Brothers Bankers

Founded 1859
Resources over \$8,500,000.00
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844.8 lbs. of BUTTER FAT in ONE YEAR or 985 lbs. of butter is the record of

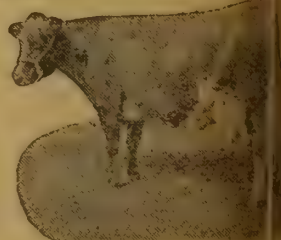
This Grade Guernsey Cow

Her milk production for the year was 16286.1 lbs.

GUERNSEY PRODUCTS HAVE THE HIGHEST NATURAL YELLOW COLOR OF ANY BREED

Write for our free booklet "GRADE GUERNSEYS"

THE AMERICAN GUERNSEY CATTLE CLUB
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SEED OATS

Get your supply now while prices are reasonable. Choice re-cleaned stocks, any quantity from a ton to a carload. Send for free descriptive catalog.

BAILEY & SONS CO.

SALT LAKE

With The County Agents

are giving this week a number of reports as submitted by the various committees to the Farm Bureau Round-Ups at Ogden and Logan. should interest every reader as are the suggestions that the agents will use in planning work.

Report of Committee on Live-stock Improvement.

In view of the fact that the live-farms of the state are the paying ones, of the increased demand within the State for live-stock, and of the growing necessity for maintenance of Soil we urge a substantial increase in the live-stock business.

order to carry out this project we recommend the following plan:

1. Increase our present number of live-stock by

2. Keeping all profitable females. can be done by keeping more females until they pass the breeding age. General interest should be kept up in this phase of the work through the Bureaus and in the public press.

3. Stamping out contagious diseases. The federal and State live-stock inspectors should be listed in this work to assist the County Farm Bureaus.

4. Purchasing more good animals. We commend that where possible live-stock be purchased co-operatively.

5. Preference should be given to breeders where the quality and price of stock is right. In shipping stock they should be ordered from the live-stock committee of the County Farm Bureaus. We recommend that all counties unite to make common shipment of pure-bred stock. The college will furnish competent live-stock judges to accompany the county men East to purchase the stock.

6. Orders for the first shipment should be in not later than April 15th. In making up orders the plan of Utah County will be followed.

7. Bureau County then:

8. We do your best to purchase for the following described animal in shipment from the East.

..... Age.....

9. We place my money in the Bank.....

10. On April 15, 1917 to the credit of the County Farm Bureau.

11. (Signed) Diversifying the live-stock. A number of live-stock should be kept on the farm to make full use of by-product of the farm and to increase efficiency. Hogs, sheep and cattle work in well with the larger work for this purpose.

12. Marketing fat stuff younger. should be finished 18 to 20 months of age, weighing 1000 to 1200 lbs. This necessitates good feeding at the time the calf is born.

13. Improve the quality of live-stock.

14. Eliminating the unprofitable. Cows should be tested for milk production and other breeding stock should be put over by their get. Inferior dams should be put over.

15. Using good pure-bred sires. but pure-bred sires should be

JOHN DEERE IMPLEMENTS

BETTER FARM IMPLEMENTS

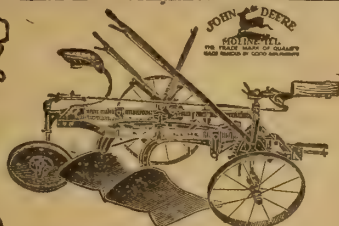
HOW TO USE THEM

BOOK FREE 156 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars.

Describes and illustrates Plows for Tractors; Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain Wagons; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders; Stackers; Rakes; Mowers and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills; Seeders; Grain and Corn Binders.

This book will be sent free to everyone stating what implements he is interested in and asking for Package No. X-160.

JOHN DEERE, MOLINE, ILL.



New Deere Light Draft Gang Plow

For twenty years the New Deere Gang has had the good opinion of enough farmers to make it the one best seller—

The New Deere Gang is the most widely used plow of its type.

It is light draft, durable and is equipped with John Deere bottoms, known all over the world for superior work, easy scouring and light pulling qualities. It cuts and turns full width of furrow.

A simple, practical foot lift and auxiliary hand lift lever—easy to raise bottoms out of the ground.

John Deere Quick Detachable Shares—great labor and time savers. Share can be taken off easily, only one nut to remove.

And, today, it is the same plow it was twenty years ago, with the usual minor refinements added.

Correct in design, always representing the highest development of the plow-maker's art, the New Deere Gang is a leader, and has been every single year for twenty years.

Go to your John Deere dealer's and look this plow over—you will readily see why it is such a popular plow.



The John Deere-Dain System Rake

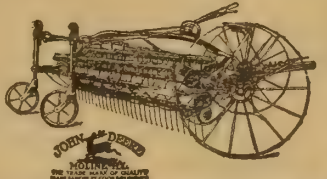
Here is what you do with the Dain System Rake:

Follow the mower closely, rake while leaves are still active and place hay upon clean stubble.

Make straight windrows, and no dumping of rake is required. There is no bunching of hay in turning corners.

Put the hay in medium size windrows, with the bulk of the leaves inside and the majority of stems outside.

The windrows will be loose in the center for the free circulation of air. The hay retains its color and nutrition.



The John Deere-Dain System is the rake employed with the Dain System of Air-Curing Hay.

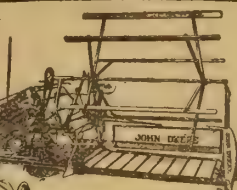
Reel raised or lowered, rake thrown in or out of gear and angle of teeth changed by means of convenient levers.

Ample capacity. The inclined frame grows higher where the windrow becomes larger—an exclusive Dain feature.

John Deere Harvesting Machinery

John Deere harvesting machines have worked under every possible condition—severe droughts that resulted in much light grain, short and irregular straw—extremely wet seasons, heavy grain, down and tangled.

However, the John Deere, "The Better Binder", has throughout maintained an unbroken record of success in cutting, binding and tying grain.



The John Deere Grain Binder has wide and high bull wheel—great power.

Main frame riveted—unusually strong.

Three packers instead of two, make better shaped bundles and save grain.

Accurate tying mechanism.

Quick turn tongue truck saves time, relieves horses and makes square corners and full swaths possible.



John Deere Hay Loaders

John Deere Hay Loaders are made in the factory where the "Great-Dain" line of hay tools originated.

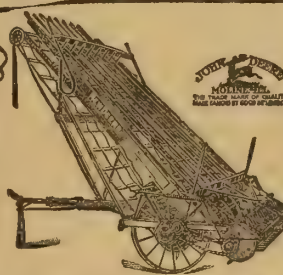
The three styles of hay loaders made in this factory (the leading loaders on the market today) are:

The New Deere Loader with the flexible floated gathering cylinder.

John Deere-Dain System Windrow Loader—a single cylinder loader.

John Deere-Dain Loader, rake bar loader.

Investigate these loaders.



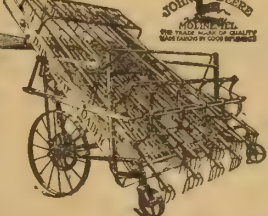
The New Deere is the hay loader with the flexible floated gathering cylinder. Successfully handles lightest swath to heaviest windrow without injuring quality of hay.

Gathers no trash.

Puts all the hay in the wagon.

The Dain Loader is the rake bar hay loader which pushes hay so far forward on wagon that only one man—the driver—is needed.

Strokes overlap, practically raking the ground twice.



JOHN DEERE, MOLINE, ILLINOIS

used and these should be at least better than the average of the dams.

3. Better feeding and sheltering stock. Cattle should never be allowed to get poor. Growing stock and feeders should never be allowed to stand still or lose weight. Feed should be plentiful and economic, and should be assisted by shelter and warm water in winter where possible.

4. Increasing our breeding herds. We recommend the increase of our

present breeding farms in at least supplying our own purebred sires.

III. Standardize and market co-operatively. Economy can be exercised by having groups of farmers breed and feed so that car or train lots can be marketed.

IV. We recommend that a series of project campaigns be run in each county under the general supervision of the project committee. That the College and United States Depart-

ment of Agriculture furnish specialists to assist in each county campaign. The general schedule will be arranged from the Extension office, so that counties will be served in a systematic order.

Report of Committee on Control of Farm Pests.

In view of the constant danger of insect outbreaks, we, your committee, make the following recommendations:

(Continued on page 10)



Combined with the
Deseret Farmer and Rocky Mountain Farming
Established 1904

Entered as second-class matter in the postoffice at
Lehi, Utah.
Published every Saturday by the
DESERET FARMER PUBLISHING CO.
LEHI, UTAH.

Subscription price \$1.00 year
Canadian and Foreign postage 50 cents a year extra.

OFFICES
All mail should be addressed to the Utah Farmer
Lehi, Utah, Kirkham Building.
Our office at Salt Lake City, Utah,
is in the McIntyre Building.



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C. A. COUR, Mgr.

Change in Address—When ordering a change in the address, subscribers should be sure to give their former as well as their present address, otherwise the address cannot be changed. This is a matter of importance to you and to us.

OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's Association, Utah State Bee Keepers' Association, Bear River Valley Farmers' Protective and Commercial Association, Agricultural College Extension Department and Utah State Fair Association, Utah-Idaho Millers' and Grain Dealers' Association, Utah Fruit Growers Association.

OUR GUARANTEE
We guarantee every subscriber against loss thru dishonesty or attempted swindle by any advertiser in this publication. We do not attempt, however, to adjust trifling differences between the subscribers and honest responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within thirty days from date of the transaction, and the subscriber must have mentioned Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent upon application.

Select only good seeds, those that will be sure to grow and produce a crop of the superior kind. The kind of crop you harvest—much depends on the kind of seed you sow.

Will there be an over production of potatoes this year? People often go to extreme. From present indications there will be a shortage of food crops, if so potatoes will have a good chance even with a extra big crop. Plant some potatoes but do not depend on any one crop.

In our issue of February 24 a typographical error was made in the advertisement of the Salt Lake Union Stock Yards, Salt Lake City. It appeared in the advertisement as published that the capacity of the packing plant was only 100 hogs per day it should have read "1,000 hogs."

There is real interest being shown in the vegetable garden this year. The hopes are it will reduce the cost of living. Much depends on the kind of a garden you make and what you produce. Every home, however, should have a vegetable garden and now is the time to plan what you will plant.

MERCHANTS AND FARMERS

When the merchants and farmers get together to discuss problems that will help build up the community, both of them learn something. Often the merchants do not carry the line of goods that

the farmers want to buy and lack of attention on their part sent the farmer away to trade. By getting together the farmers will find out that the dealers will handle the goods he want, and will carry a complete stock of repairs, etc., if the farmer would make known his wants. What is needed is a better understanding and it will help the community.

ANALYZING THE FARM BUSINESS.

The practice of applying careful business methods to farming is proving worth while. Keeping books and analyzing their business in such a way, so they can tell the source of their income, the way in which their money is spent, is all helping the farming business. Any one who is making a study of his farm should send for Farmers Bulletin No. 661, Department of Agriculture, Washington D. C.

So simple are the methods of keeping farm accounts, as arranged by the government and state workers that any one should be able to do it. If you have a record of your farm accounts you are able to compare it with others and find out where you are spending too much money to get the same results.

Know your business, learn the details, you can do it best by keeping records or accounts.

WHO IS TO BLAME?

Of all the helpful tools that the man who keeps one or more cows can use, none is more efficient than the scales and Babcock tester.

If you are keeping cows and some of them are not paying for the feed they eat, who is to blame? There is a way to know this and its up to you to make the test.

Some people really think they can guess—but how can they? The cows testing association has given us many surprises and sent some of the "old pet cows" to the block.

It is now possible to know with in a very small amount just what it costs to keep a cow. To know how much milk and butter you get in return for the feed. If you have this opportunity and still keep the unprofitable cow—who is to blame.

VALUABLE ADVERTISEMENTS

It is a common practice now with food manufacturers to supply with their products, or in answer to their advertisement, a book or pamphlet of recipes. These manufacturers have learned that it is a temptation to any house wife to try out a product if some good recipe is handy. Many manufacturers go to a great expense in securing experts, who thoroughly test the different methods suggested.

We recommend our reader to answer the advertisement and secure these recipe book. What is true of the food manufacturer is also true of others, only their books are on different subjects. The implement man will tell you how to use his tools, how to care for them, how they are made. The seed man gives much valuable information about planting, etc.

We suggest you answer the advertisements, those in which you are interested.

DAIRY COWS NEED MUCH WATER

We have often emphasized the necessity of providing plenty of water for dairy cows. At the Missouri Station they have been making some tests. A cow that is giving milk will drink 4 to 5 times as much water as when she is dry. This is very true of cows giving a large amount

of milk, one cow giving 100 pounds of milk daily used as high as 2,601 pounds of water daily. When a cow is in milk she should have a chance to get plenty of water at least twice a day. If the water is too cold or impure she will not drink enough to produce the milk they are capable of yielding under favorable circumstances. Provide your live-stock with plenty of good pure water and in winter see that it is warmed to about 60 degrees F.

RAISE MORE SHEEP

There seems to be many reasons why we should produce more sheep. The Secretary of Agriculture made a strong plea in his annual report for the increased production of sheep. When commenting on this subject the other day a practical farmer and one who had some experience with sheep suggested that many of the old ewes that are taken to the desert to winter should be feed at home on our farm. If better care was taken of them they would last a year or two longer and in this way help to increase our supply of lambs. Feeding of these ewes would give profitable employment to the farmer or his help and a good market for his feed. Will also help to keep up the fertility of the soil.

IMPROVED ROADS—INCREASED TRAVEL

From figures taken by the county commissioners of an eastern state, they found that as soon as a new concrete road was opened the traffic was greatly increased. Not only do the people living along the road use it more, but persons come from miles around on either side to use such a road in preference to the dirt roads they formerly traveled. So these commissioners have decided they must provide for at least three times the present traffic on a road when they put down a concrete roadway.

A great deal of money will be spent in Utah this year for roads—make them good even if you do not cover so many miles—it will pay as the up keep on a poor road is often more than the cost of a new one unless it is well and permanently built.

CONGRESS AIDS VOCATIONAL TRAINING

Those who are interested in the industrial welfare of the country are very much elated over the recent action of the United States Congress in passing a bill providing for federal aid to vocational training. The bill grants to each state sufficient funds to materially help young people in choosing a vocation and to point out ways of preparing themselves for the work of their lives. A commission appointed by President Wilson prepared the bill after very careful study of the various phases of the question had been made.

Certainly there is no more important work for a government than that of making its citizens industrially independent and able to earn a comfortable living. At present there is a great waste in the country on account of misfits. The earning power of workers generally could be very much increased if they were all doing the work for which they were by nature adapted, or if they were well prepared for the work they are doing. It is believed that the vocational training, made possible by this legislation, will do much in the future to prevent many of the misfits.

Farmers should be especially interested in this measure since it is probable that considerable attention will be given to agriculture as a vocation for young men.


HOME

VENTILATING THE HOUSE


Nothing in the whole realm of a woman's kingdom—the home—is of more importance than ventilation, and that does not mean the letting in of a bit of fresh air on one side of the house, or letting out of a little bad air, but it does mean having a circulation of air through a room, or through the whole house; for it is an incontrovertible fact that impure air is the cause of more illness than any one other thing.

Nothing in the world is so absolutely essential to life and health as the


For either
brain
or
muscle



Baker's
Cocoa
is
refreshing



"Cocoa contains
more
nourishment
than
beef."



Walter Baker & Co. Ltd.
ESTABLISHED 1780 DORCHESTER, MASS.

Every Grain in Bottom of Furrow

The increased yield, in a single crop, from perfect seeding, will go far to pay for the


Moline-Monitor Double Disc Drill

Saves seed by sowing it uniform depth—every good seed grows.
Increases the yield because wide furrow gives more room to stool, more stalks, more heads.
Improves the grade—uniform growing means even ripening.
Furnished with double or single disc furrow openers, as desired.
Built almost entirely of steel—does good work for years.
Ask your Moline dealer, or write us for illustrated literature.

Moline Plow Co., Moline, Ill.
Dept. 33

THE MOLINE LINE INCLUDES

Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Vehicles, Wagons.



oxygen contained in pure air, and no element is more quickly exhausted and replaced by the carbonic acid gas exhaled with every breath of every person, or animal, in a building. Added to this source of impurity we have the steam and odors of cooking foods and many other elements, even down to the vegetables stored in the cellar.

The more the air in a room is heated, the dryer and lighter it becomes, and because of this, it rises to the top of the room, leaving the heavier air, laden with moisture and impurities, below for people to inhale. In this fact we find the entire principle of ventilation—letting in pure air from below to crowd the impure upward and out, and as the pure is made impure with every breath drawn in and exhaled, there must be a constant circulation of air through the rooms. Another fact worth remembering is that it is almost impossible to heat dead air, and many times in cold weather when it seems impossible to get any warmth from the fire, all that is needed is the opening of doors and windows for a moment to let the room fill with fresh oxygen-laden air. Even a fire dies without oxygen.

A well-ventilated attic is a great help in keeping the air pure in lower rooms, as it causes an upward draft. An open fireplace, or an open stove, are other helps in keeping the air in circulation. During the day the opening of doors by those passing in and out helps to keep up the supply of oxygen for those inside while the one who goes out gets it by lungfuls.

Too many spend their sleeping hours in rooms with no ventilation worth naming, and, as a result, morning finds them unrested and listless, to say the least, so special care is needed as to sleeping-room ventilation. If windows are left open, leave the clothing in a warmer room and go there to dress. Having plenty of fresh air does not mean needless exposure to cold.

New homes are built with modern devices for ventilation, but the oldest have doors and windows that may be opened. Don't stuff every crack and crevice. Let the cold air in—it's pure, and pure air will, by preserving the health, prevent loss of time, save doctor's fees and fuel bills as well, for reasons already stated. — The Furrow.

PLANTING OF ROSES

By Emil Hansen.

Our climate in Utah is not the very best for roses, on account of the high altitude and dry air. However by planting varieties best adapted to this condition, and by following directions stated below regarding

planting a good result may be secured.

It is often seen that roses are planted here and there in a lawn, or in a row on either side of walk leading from the street to the entrance of the house. This method of planting is not to be recommended as it interferes with the rules of the plan of landscape gardening, that the lawn should be "open" and free from any roses or shrubs. Except in rare cases where it may be well to plant one or more solitary bushes instead of making a group. Roses do best if planted in beds prepared for them. By using this method the cultivation and fertilizing can be done much more conveniently. A bed to be used for roses should be dug to a depth not less than 18 inches, and the soil thoroughly mixed with well rotted manure, under no circumstances should manure be put into the holes when planting.

Winter Protection

For Winter protection of Rose bushes a heap of manure can be placed around each bush, sometimes during the month of December, and allowed to remain there until about April according to the weather conditions, when it can be spread on and the bed dug in. At that time it is best to prune the bushes by thinning out the weakest shoots back two-thirds of their original length. When doing this it should be noticed that the cut is made right over a bud which is turning outward.

The following are a few varieties which are hardy and well adapted for this climate.

Name	Color
Kaiserinn Augusta Victoria	Cream
La France	Pink
Caroline Testaut	Pink
Alfred Columb	Crimson
Fisher Holmes	Dark Red
Frau Karl Drousky	Pure White
General Jaqueminot	Dark Red
Poul Neron	Large Pink
Ulrik Brunner	Cherry Red
Crested Moss-Roses	White & Pink

Diseases of Roses

Roses are more or less subject to diseases, some varieties more so than others.

Powder mildew is extremely common, especially are Crimson Ramblers subject to this destructive disease, this fungus frequently appears very early in the season on young buds, leaves and young shoots. If the attack is severe, the development of the young shoots are checked, the leaves become deformed and curled, and fall before maturity.

A good remedy for mildew is lime-sulphur or Bordeaux mixture, especially the lime-sulphur is to be recommended for spraying during early spring, and during early periods of the disease, as this does not injure the leaves on the bushes.


It is well to apply one spraying late in the fall and leave all diseased leaves and limbs removed from the place and burned?

The following formula for Bordeaux mixture to be recommended is two and one half ounces Copper Sulphate (bluestone) two and one half ounces unslaked lime to two gallons of water. The commercial lime-sulphur has directions for its use upon the container, and can be purchased by any well assorted seed store.

Insects and Insect-Remedies.

The presence of leaf-eating insects is usually detected by the discovery of partially eaten leaves. If these

(Continued on page 14)




Take Care of
Your Cows

—And they will take care of you. Almost immediate returns may be secured by the feeding of a proper ration like—

SUNRIPE
Stock Feed

This is a scientifically balanced feed for dairy cows, and is good for other stock. Promotes health and increases milk production.

Economical because of its nutritive value. Write for our free booklet "Feeding for Results."



Utah Cereal Food Co.
Ogden, Utah

POULTRY

KEEP YOUR CHICKENS CLEAN Valuable Suggestions on Care of Chickens Given by Expert.

In urging western poultry raisers to increase the size of the poultry business here and thus increase the annual egg production. Professor Byron Alder, poultry husbandman of the Utah Agricultural College, recently emphasized the great necessity of keeping the birds free from mites and lice. The following suggestions are offered to accomplish this end:

The mite has a gray color with brown spots on its back when not filled with blood. It lives and breeds in cracks and corners in and around the perches and nests; going on the fowls usually at night only long enough to suck its body full of blood, then crawling off to some secluded place. The accumulation of dropping and filth in a poorly ventilated, damp house affords very favorable conditions for this very numerous enemy. Keep the building well ventilated and clean. Spray the entire inside twice a year with whitewash made in the ordinary way with one pint of crude carbolic acid to each gallon of whitewash, then paint the perches once a week with kerosene after adding about 6 ounces of carbolic acid to a gallon. Keep this mixture in a machine oil can and soak thoroughly all cracks or corners that show any indication of mites as often as they are seen, and the building and fowls will soon be free from one of the smallest but without doubt one of the worst of poultry pests.

Lice live and breed on the bodies of the fowls and feed on the surface scales around the base of the feathers. If the fowls have a dust bath or dust wallow there will be few lice on their bodies. An occasional dusting with some good lice powder, during which the fowl is held by the legs, and the powder sifted from a perforated can and rubbed well into the feathers with the hand, will aid greatly in freeing the bodies of the chickens from this pest. A good powder may be made by taking one part cresol to three parts gasoline. Mix this thoroughly, then add enough unfinibed plaster, a little at a time, stirring continually, until all the liquid has been taken up, giving a tone or pinkish powder. Blue ointment is also excellent remedy for lice. This is a poison and should be handled carefully. Take a small piece about the size of a pea and rub it well into the base of the feathers on the abdomen in the fluff just below the vent.

Scaly leg, which is caused by a very tiny insect getting under the scales of the legs forcing them out and causing the legs to appear rough and knotty, is very common among the general purpose fowls. This disease is not noticed by many until the legs are swollen so much that the fowls can hardly walk. It is easily controlled by rubbing the legs in the early stages of the disease with lard and kerosene equal parts, or by the application of vaseline or other oily mixtures.

These pests do not often kill a fowl, but they sap the vitality and weaken a hen so that she lays few or no eggs, and is readily overcome by some minor ailments that would have little or no effect on a strong, vigorous animal.

All diseased birds should be isolated as soon as any ailment is noticed, so as not to endanger the rest of the flock, in case they should have a contagious disease.

For colds or roup disinfect the drinking water by adding 4 or 5 drops of carbolic acid to each gallon of water or the amount of permanganate of potash that will stay on a dime. Stir thoroughly.

Keep the fowls in clean, sanitary quarters and thus have strong and vigorous birds.

Do not overfeed or make the hens lazy. Avoid feeding food with strong flavored or partially spoiled food of any kind.

The following references are given for further study and more detailed information. Farmers' Bulletins may be obtained free as long as the supply lasts by applying to the U. S. Department of Agriculture, or to one of the Utah Congressmen in Washington, D. C.

Farmers' Bulletin No. 244, Method of Feeding Poultry.

Farmers' Bulletin No. 287, Poultry Management.

Farmers' Bulletin No. 528, Hints to Poultry Raisers.

Farmers' Bulletin No. 574, Poultry House Construction.

Farmers' Bulletin No. 585, Natural and Artificial Incubation of Hens Eggs.

Farmers' Bulletin No. 594, Shipping Eggs by Parcel Post.

Farmers' Bulletin No. 624, Natural and Artificial Brooding of Chickens.

Bureau of Chemistry, Circular No. 61, How to Kill and Bleed Market Poultry.

Utah Experiment Station Circular No. 14, Housing Farm Poultry.

TIMELY POINTERS

H. A. Reglar.

Eggs are selling at 45 to 50 cents per dozen, this is probably the first time in many years that this high figure was maintained during the month of February.

If some of the live-stock did not winter as well as they should, feed a little grain now so they will be in good condition to go on the Spring range.

Don't overlook putting in a few acres of mangel beets this spring. All of your stock will do better by having them and they save considerable feed in many directions, this is especially true with dairy cows.

Make it a point to raise a few more acres of farm products, there is a ready sale for all your produce at high prices at present. It takes five dollars (\$5.00) to get a sack of potatoes and fifteen dollars, (\$15.00) to own a sack of onions; cabbage holds its head proudly high for it takes from 40 to 50 cents to buy a medium size head.

Now is the time to clean your harness, take it apart and clean it carefully and oil it well. This also applies to your implements. Also plant your early tomatoes, cabbages and cauliflower seed now. Transplant them in flat boxes as quick as they have six leaves. Remember the stronger the bigger the crop.

Just as long as there are more consumers than there are producers, there is bound to be high prices for products of the soil. A few years back our City Cousin had a nice little vegetable garden near his home and a dozen or two of hens; now the vegetable plot is sown in grass or grown up with weeds and the hen coop is housing the tin Lizzie.

Raise Every Chick

Feed your chicks properly at the start and you will raise them. Millions of baby chicks die each season because they are not fed "baby food" especially suited to their needs. We guarantee that

Pratts Baby Chick Food

will safely carry your baby chicks through the critical first three weeks and make them big and strong. Then you can bring them to maturity.

Pratts Baby Chick Food is a correctly-proportioned, balanced ration for baby chicks. It contains cereals, animal food and mineral matter to build flesh, feathers and bone. It completely nourishes the chicks—gives them a strong start—prevents chick troubles due to improper food and digestive disturbances.

Our dealer in your town has instructions to supply you with Pratts Preparations under our square-deal guarantee—"Your money back if YOU are not satisfied"—the guarantee that has stood for nearly 50 years.

Write for FREE copy of "Baby Chick Book"

PRATT FOOD COMPANY

Philadelphia

Chicago

Toronto

pratts

WEALTH! FOR THE MAN WHO IS WILLING TO WORK!

Where Else Can You Find Such Land as This—On Easy Terms

Rich, humus-laden silt loam soil.
Beet land running from 15 to 20 tons.
The richest dairy section of Utah. Tile drained—the most modern and complete drainage system in the west.
Railroad traverses entire tract.
Logan two and a half miles away.

Plenty of irrigating water at a cost of 11 and 12 cents per acre.
Sugar factory and two condensed milk factories two miles away.
Logan schools only 2 1/2 miles away.
Price \$100 and up per acre; terms \$20 down—long time and easy payments on balance.

Richland Acres

THE HEART OF CACHE VALLEY

Here—on the floor of beautiful Cache Valley, close to good towns, good neighbors and sugar and condensed milk factories and with the railroad traversing its entire length through the center—lies YOUR OPPORTUNITY.

2800 acres of the richest and most fertile silt loam soil in all Utah. Years ago this land boasted the most luxurious grain and alfalfa growth of the intermountain west. Then over-irrigation water-logged the land.

NOW—at an expense of thousands of dollars—drain tiles have been placed at a depth of five and six feet over the tract—draining off the surplus water in the soil—leaving the richest of all of Utah's rich and fertile soil—soil that will yield from fifteen to twenty tons of beets per acre—soil that will grow luxurious grain and hay crops—a country ideal for dairy cows! Modern beet dumps at your very door! Ogden and Salt Lake livestock markets three hours away! Buy any size farm you wish, from fifteen to fifty acres. Richland Acres is a legal subdivision of Cache County—accepted by the County. The best water right in Cache Valley is YOURS—a splendid irrigation system, steel gates, turn-outs and checks—plenty of water—gravity system—and the entire tract underlaid by a big water reservoir, insuring fine flowing wells. Think of the cheapness of this water—11 to 12 cents an acre.

LOW PRICES—EASY PAYMENTS

Come and see this land with your own eyes or write, telephone or telegraph to Ed. D. Smith & Sons, Exchange Place, Salt Lake City; H. E. Smoot, Provo, Utah; or the Reburg Real Estate and Loan Company, Rexburg, Idaho, the Cardon Company, Logan, Utah, for detailed information.

Logan Land & Drainage Company

A. F. CARDON, Manager, Logan, Utah.



When you answer advertisements, mention the Utah Farmer.

Sow some field peas there is no better hog feed, if you want them for fodder, plant 70 pounds peas per acre and 60 pounds of oats, after you harvest your crop your soil is in better condition than before you planted your peas.

It is really surprising the different ways farmers have to make money; a farmer in Salt Lake County raises ten acres of corn each year, he says he don't care much about the corn as he gets over \$100.00 per acre for the husks which he sells to Tamala dealers in Salt Lake. Another farmer at Malta, Idaho, got \$4,000.00 for 40 acres of Sweet Clover Seed. D. F. Detweiler at Filer, Idaho, raises 20 acres of Onion Seed each year and of course the latter are strong enough in flavor and high enough in price to speak for themselves.

LEATHER TIPS AND POULTRY LORE

The cleaner the house, the happier the hen. That spells eggs.

A dust bath every day is a help to comfortable chick bodies.

The best way to water hens is through a fountain into which they

cannot get their feet.

Foul water is an abomination to a hen. Scrimp on water and you gather fewer eggs at nightfall.

Ventilate, but not through cracks nor open windows.

Plenty of wheat to feed, not a kernel to waste, is a good word for the poultryman this winter.

A trough well cleaned of feed after every meal and a hen that is hungry next morning—these are guideboards on the road to poultry success.

In these days of high-priced feed, not a hen ought to be kept that does not leave eggs in the nest that are worth more than the feed she eats.

But even an every day hen may be made to do pretty good business by good feed and better care. Most of us have such hens. It stands us in hand to pick these hens out, house them by themselves and make a special effort to improve their laying qualities. Just a bit more feed and a lot more of good treatment may put a good margin on the right side of the hen account.

Some skimmed milk and a good deal of the milk of human kindness will do wonders in the poultry business.

Here is a good ration for pullets that are just beginning to lay: Wheat bran, 100 pounds; ground oats, 50 pounds; corn meal, 50 pounds; alfalfa meal, 10 pounds; meat scrap, 20 pounds. Mix and feed dry. Add some green feed and keep a whole grain ration of corn and wheat all the time before them, in proportion of one part corn to two parts wheat. The corn may be cracked. Milk is great, too. Remember that the birds must have food to keep them growing yet a while, as well as to make eggs.

Glass is a fine conductor of heat. Let in all the sunshine you can in cold weather. It means health.

Here are three pointers to poultry success: Exercise, pure food in good variety, and plenty of it.

Before we urge farmers to increase their flocks by a single hen, we want to see them grow more of the stuff needed to feed the birds. Buying high-priced feed cuts the very heart out of the poultry profit.

Nobody is better situated for making a success of poultry keeping than the farmer. He has range, a chance to grow most kinds of feed, and plenty of milk and pure water.—The Furrow.

EFFICIENCY

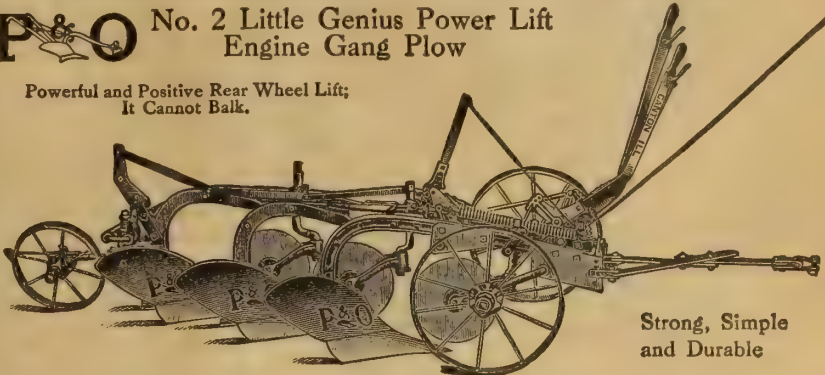
Efficiency comes to you and says, "You must change your way of doing things." Well, don't you know how all of us, the moment a man says "You must change your way," is put on the defensive? If you have done something, worked something out—it may be a very little thing, but you have worked it out the best you could—you know what it cost you, you know the effort and the pain and the sacrifice that that little imperfect achievement cost; and when a man comes along and says, "You should not have done so; you should have done so. This was all wrong. You wasted your time and your strength and your money. Do it this way," your vanity is piqued, and you don't like it. What you want is congratulation and praise. You don't want criticism, and one of the primary elements in this fear of efficiency is because it attacks our way of doing things, our vanity, and wants to show us a better way, when we like to believe that we have got the best way possible.—Ida M. Tarbell.

P & O ENGINE GANG PLOWS

Power and Lever Lift Mogul Engine Plows in from 4 to 12 furrow. Little Genius Power Lift in 2, 3 and 4 furrow. Senior in 5 and 6 furrow. Engine Grub Breakers weighing a ton and cutting a single furrow 24 inches wide by 12 inches deep. A line of engine plows with a world-wide reputation for strength, efficiency and ease of operation. "It's the Way We Build Them."

P & O No. 2 Little Genius Power Lift Engine Gang Plow

Powerful and Positive Rear Wheel Lift; It Cannot Balk.



Strong, Simple and Durable

The little plow with a big record. High level lift on all three wheels. A single trip rope gives the operator sure and easy control. Pin break hitch, adjustable to all tractors. Any standard type of P & O Bottoms, the No. 2, two and three furrow in 12 and 14 inch, and the No. 3, four furrow in 14 inch.

Write for circulars and catalog. Explain your plow problems to us; we can give you valuable information. We make a P & O Engine Plow that will meet your requirements.



Utah Implement -Vehicle Co.

Salt Lake City, Utah



High Front Wheels - Flexible Frame -

Four successful years in the field have conclusively proven the many advantages of these features as well as the absolute dependability of the

PARRETT

The Original High Wheel Tractor

The all purpose farm power unit. Imitated but not equalled. For accurate, practical information on Parrett Farming, address

Parrett Tractor Company
114-C Fisher Bldg. — Chicago, Ill.



Big Money in Running Water

Let us start you in a business that will make you from \$15 to \$50 a day when farm work is slack. Other men have done it for years with an

Improved Powers Combined Well Boring and Drilling Machine

Same rig bore through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for wells to water stock and for irrigation. Write for free illustrated circulars showing different styles

Lisle Manufacturing Co.
Box 976 Clarinda, Iowa

Bush Car Delivered Free

In a Bush Car. Pay for it out of your commissions and my agents are making money. Shipments are prompt. Bush Cars guaranteed or money back.

Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 38N

114-in Wheelbase
Electric Ignition—Elect. Stg. & Ltg.

MOTOR COMPANY, Bush Temple, Chicago, Illinois

Name Your Own Price for a rich Irrigated Farm

at Mosida, Utah County, Utah

This wonderful farming project, in the most fertile valley in Utah, will be **SOLD AT AUCTION** under order of the District Court, on Monday, March 19, at 10 a. m.

Farmers---Come and Bid!

This is positively the greatest opportunity ever offered in Utah to buy first class irrigated lands at a fraction of their actual value.

Adjoining lands were sold at \$100, \$150 and \$200 per acre. You may be able to buy these farms as low as \$40 to \$60 per acre. Offered in units of 40 acre farms.

SPECIAL NOTICE: The Mosida Hotel, Canal System and all other property of the Mosida Fruit Lands Co., will also be sold at public auction. Don't miss this opportunity!

For full particulars see Legal Notice in Thursday's Deseret Semi-Weekly News or write **AT ONCE** to

H. C. ALLEN, Receiver

1401 Walker Bank Building.

Salt Lake City.

IMPORTANT NOTICE

Owing to unfavorable weather conditions, the above **AUCTION SALE** will be postponed to the same hour and place on Monday morning, March 26, 1917.

H. C. ALLEN, Receiver.

CUTLERY
BRANDED

Veribest
TRADE MARK

Shows quality under every test.

Strevell-Paterson Hdw. Co.

Salt Lake City, Utah.

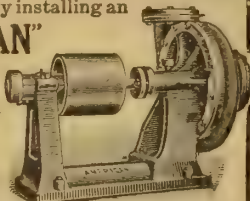
S.P. 3

IRRIGATE Your Field and Garden

Get larger yields and profits. Provide fire protection for your buildings, and water for your stock by installing an

"AMERICAN" Centrifugal PUMP

Absolutely guaranteed. Write for new catalog.



THE AMERICAN WELL WORKS
General Office & Works: Dept. 36, Aurora, Ill.
Chicago Office: First National Bank Building.

Order Now

Send in your order now for Spring and Summer knit goods.

Our stocks are complete at the present time—assuring you prompt deliveries. Underwear, Hosiery, Lightweight sweaters, etc.

We specialize in approved.

L. D. S. GARMENTS

SALT LAKE WOOLEN MILLS

50-52-54 Post Office Place
SALT LAKE CITY, UTAH

SEEDS

FREE 1917 PLANTING GUIDE and Pure Seed Book! 96 pages. Handsomely illustrated in many colors. Describes latest, best varieties vegetables, flowers, field crops, fruits, shrubbery, etc. A dictionary on gardening. Flower lover's delight. Field crop guide. and orchardist's manual. Berry-grower's book. A postal gets it. Don't buy seeds until you read it.

GALLOWAY BROS. & CO.

Pure Seed Specialists, Waterloo, Iowa.

NO DANGER

Fond Father—"My son is taking algebra under you this term, is he not?"

"High School Teacher—"He has been exposed to algebra, but I doubt if he will take it."

WITH THE COUNTY AGENTS.

(Continued from page 5)

1. Every county agent should have in his office a copy of Sanderson's book on Insects of Farm Orchard and Garden. He should have in his pocket the latest bulletin of the Utah Horticultural Commission on insect control.

2. Every County Farm Bureau should secure through the Entomology Department of the College a supply of white arsenic from the smelters. This may be secured free of charge.

3. The President of each local Farm Bureau or some member appointed for that purpose, should be held responsible to report insect ravages in their community to the county agent at once.

4. All attempts at insect control by the county agent, the College, or the Department should be done through the County and local Farm Bureaus.

5. In cases of serious outbreaks the Entomology Department at the College should send an expert to assist the county agent. The office of the Department in the State should be called upon for information and advice.

6. We further recommend the appointment of an entomologist on the Extension Division.

7. Because of the fact that Bulletin No. One of the Utah State Horticultural Commission does not recommend methods of controlling all the main farm pests, we recommend the following:

As far as possible these methods of controlling farm pests should be cultural methods. Under cultural methods we have crop rotation, cultivation, dragging, and time of plowing.

Methods of Controlling Farm Pests.

Mechanical means of control—catching machines, trenches, burning, screening, sticky fly paper, sanitary closets, cement manure pits, tanglefoot, shields for grape leaf hoppers, bands, and general sanitary measures.

Insecticides are classified into internal and external.

Internal.
Arsenical—Lead arsenate; Paris Green, on cabbage dry spray; white arsenic, grasshoppers.

Non-Arsenicals—Strychnine; hellebore, for house plants; boric acid, on manure piles; formalin, for house flies.

External.

Lime sulfur, commercial, for scale insects; nicotine solutions, preferably black leaf forty, greenhouses, sulfur, for greenhouses and red spiders; cold water, cottony maple and European Elm scale; scalecide, or any miscible oil.

Various Crops and Insects Affecting the Same.

Fruit Trees—Coddling moth, lead arsenate; apple leaf roller, scalecide; San Jose scale, lime sulfur, commercial; other scale insects, black leaf 40 after hatching; Aphids, black leaf 40; Woolly Aphis, soak rag in coal-oil and rub on woolly patches; Pear slug, lead arsenate, time of first spray for coddling moth; red spider and brown mite, cold water and black leaf 40; peach tree borer, dig out, peach twig borer, lead arsenate in early spring.

Small Fruits—Strawberry root weevil—plant in fall and rotate every three years, clean stack, rake off and burn all vines; leaf roller, lead arsenate, cut and burn vines; currants and gooseberries, fruit flies, stir ground around vines late in the fall

pick and burn affected berries; raspberry cane borer, cut and burn injured canes.

Vegetables Crops—Cabbage worm, Paris green, dry spray; cabbage aphids, black leaf 40, double amount of soap; corn ear worm, spray silk with arsenate of lead, or one quarter Paris green to three quarters flour; repetition necessary.

Field Crops—Wheat, fall or early spring plowing; must cover stubble; alfalfa weevil, cultivation and dragging, cleaning edges; grasshoppers and butterflies, dig up ditch banks, roads and fields in the fall or early spring; alfalfa seed thrips and cales fly, rotation and cultivation for thrips; for cales fly clean up and cut all blooms around edges of field on first crop; sugar beets, army and webworm. Arsenate of lead 5 to 50, root aphids, cut down poplars and cottonwoods, rotation of crops; sugar beet leaf hopper—keep soil moist and crops growing; potatoes, aphids, spray peach trees early spring with black leaf 40, wire worms, rotation, and clean up edges of field; tomatoes, green worms, and picking flea beetles, dip tops in leaf arsenate, 1 oz. to 2 gallons water.

Shade Trees—Oyster shell bark louse, bleach leaf 40 in early spring; European Elm scale, cold water, lots of pressure; Evergreens, scale insects, black leaf 40.

Gopher and Rodents — Strychnine wheat, brine shingle 1 oz. strychnine to 2 quarts salt water; soak shingle in water and put in gopher hole, early spring.

Rabbits—Tight fence, drives, 1 oz. strychnine suphate to 2 gallons water, 10 pounds of alfalfa leaves; feed rabbits for one day or two in runaway before giving poison; winter time best.

Nematodes—Rotation or fallow, Farmers' Bulletin 772, Beets 2 to 3 years, alfalfa 3 years, corn or potatoes, barley or wheat one year, no oats.

English Sparrow—Strychnine sulphate 1/2 oz. in 1/2 pint boiling water to 2 quarts wheat.

Drainage and Irrigation.

The committee recommends that interest should be stimulated in the drainage problems of the State where necessary.

The County Agent should first thoroughly familiarize himself with the nature and condition and possible solution of the problem. The Extension specialist should be called to work with the county agent in making this preliminary survey by means of borings, to determine the nature and source of water supply and subsoil. They should make surveys to determine outlets and general estimate of costs.

When the problem is found feasible, the following steps should be taken to get the necessary interest:

1. Publicity in the local paper of facts found in the preliminary survey.

2. Present case to the farm bureau directors and appoint a drainage committee.

3. Secure aid from U. S. Drainage Investigation Department for detailed survey for method and materials to be used, and costs.

4. The Bureau should call a meeting of interested farmers where a report of the detailed survey should be given and steps taken for co-operative organization for attacking the problem in accordance with the drainage laws of the State.

Where an Extension Specialist or U. S. Department expert is available they may give general supervision, survey, map, and furnish all needed instructions in completing the system, otherwise the benefactors of the drainage system must employ a competent engineer to do this work. The benefactors must do all other work and pay all expenses.

The county agent should write a history of the conditions before drainage began, take notes of the progress and costs of construction, and the estimated increase in value of the land after it is drained. These re-

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cords should be approved by the engineer and drainage committee. In pumping and irrigation problems the same general plan may be followed.

1. The agent must make himself thoroughly acquainted with the conditions.
2. Get general interest through publicity in local papers.
3. Discuss with directors of local Farm Bureau and get Bureau to choose a committee to make all arrangements.
4. Bureau call meeting of interest-

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ed farmers and secure their co-operation and support.

5. Secure needed aid of a competent expert.
6. Record history of previous conditions, measurements at beginning, progress of work, costs, and estimated gain after completion. This record should be approved by engineer and committee.
7. Only one irrigation or drainage problem should be undertaken in one county. If the problem is one of irrigation, the first one should be for efficiency in the general distribution of water where that is lacking.
8. The benefactors shall do all work and pay all expenses.

(Signed) H. A. Christiansen.

SUCCESSFUL FARMING AND SUGAR BEET GROWING

(Continued from page 3)

It must not be inferred from this that sugar beets were the only thing that caused the difference in the incomes because the figures show beets to compose only a portion of the total income. Those raising beets seem to be those who look after the details of farming best, and since sugar beets offer a ready source of no inconsiderable profit, it is natural that they should include this crop. From the table it may be found that while the sugar beet farmers earning more than \$2,000 had only 3.13 per cent of their land in beets, about 36 per cent of their crop income was from this crop if the tonnage is figured at \$5 per ton. In a like manner the other beet farmers devoted 10 to 14 per cent of their land to beets and about 60 per cent of the crop income is apparently due to the beets raised. Including beets with other profitable crops and also paying attention to live-stock gives the farmer the surest profits.

To show the proper balance between the crop and the live-stock of the farm, the crop and stock incomes are given. Even though the sugar beet farmers had about the same or somewhat smaller farms than the others, they sold more crops and live-stock on an average than the non-beet growers. That sugar beets make good farmers of those who persist in their culture is often asserted and this is certainly indicated from the report before us. The great amount of attention needed by beets appears to make the farmers look after the details of scientific farming better than do most other crops. Although the best farmers growing beets did not raise the largest yield of beets to the acre on an average, a decrease in labor income seems to follow a decrease in the acre yields for the farmers making less than \$2,000 a year.

The total number of acres in the farms is seen to decrease as the labor income of the farm decreases and the acreage devoted to beets decreases in the same manner. The best farmers grew 16.88 acres of beets and the poorer beet farmers grew only 5.95 acres on an average. Of these 276 farms, the one bringing the highest labor income grew 80 acres of beets; the five poorest (those losing more than \$700 for their work) grew no beets, and the beet farmer getting smallest returns grew but two acres of beets. An average of 70 beet farmers with 40 acres or less land shows them to devote 21 per cent of their land to sugar beets and to receive an income of \$581 for their year's work. The fact that the 38 non-beet growers with less than 40 acres of land only made a labor in-

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gets bigger crops with half the work.

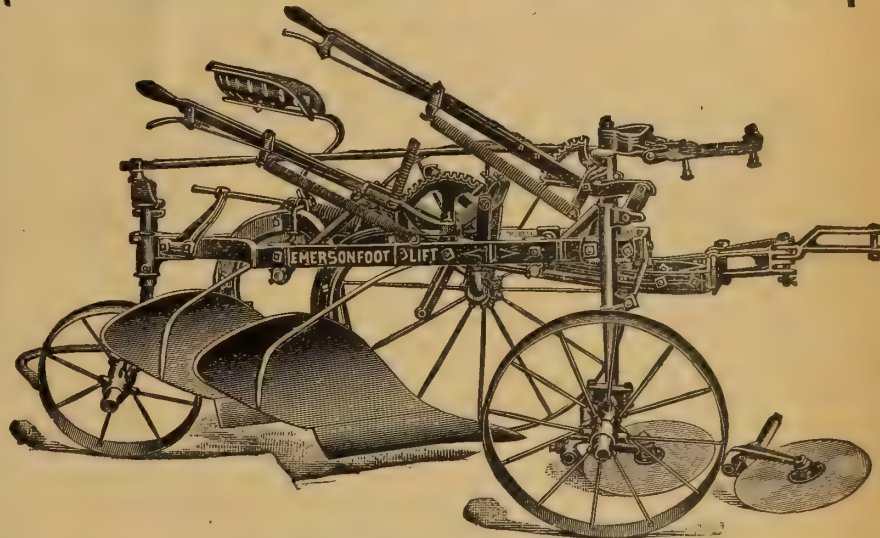
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come of \$182 shows that where the farm is rather small, it should be intensively worked. Beets are undoubtedly an excellent crop for the man with a small farm area.

From this discussion, it is very plain that the sugar beet propaganda so urgently being pushed by the sugar factories is not founded entirely upon selfishness. It is to the interest of both the farmers and the factories to grow more beets. Besides the direct financial benefit from beet growing, experience from older countries shows beet culture to induce more attention to the principles underlying farming, which in turn promote a permanent system of agriculture. A permanent source of a very reasonable income is at the hands of those who are willing to take the care necessary to become good farmers.

No crop is known which so well fits into Utah conditions as does sugar beets and the sooner the farmers find it out the better off will the state be. Our high-priced land demands crops which will bring a high net return per acre and beets is one of the most important of these crops. This is the message of the successful men and he who is wise will heed the methods of such persons.

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LIVE STOCK

FEEDING IMPORTANT IN PIG RAISING

J. C. Hogenson.

Correct feeding is a big factor in the economic production of pork. This feeding should begin with the mother for the best results. "Before the young pigs are born the sow should be given a heavy nutritious ration, in order that the young pigs will get a good start in life. A ration for the sow in this condition should consist of a slop made up of a grain mixture of one part corn, one part shorts and one part bran and milk, using one pound of the grain mixture to every three or four pounds of milk. After the sow has farrowed she should be fed about the same ration in order that her milk supply will be kept up and the young pigs be well fed. For the first two or three weeks the young pigs are fed entirely through their mother, but at the end of this time they show a desire to eat from a trough. A trough low enough for the little ones should now be built and placed inside of an enclosure which is so constructed as to keep the old sow out, but allow the little one to go in and out. Care at this time should be exercised in order that the young pigs may get started right on their new feed and gradually weaned away from their mother. Many young pigs are stopped in their growth at weaning time, this causing quite a loss.

"The secret of successful feeding is to obtain the most growth in the shortest time. It seems that the pig starts out with a certain impetus to use food economically in large quantities for growth, and every check we put to that impetus reduces the economy of feeding. By keeping conditions at their best and thus removing any friction, the force to

grow, behind the pig is very much greater than under any other condition.

"The first food given young pigs should be a slop made up of one pound of first class shorts and five to six pounds of skim milk. If this is given to the young in such quantities as they will clean up well when they are about two to three weeks of age, at weaning time, which is at the age of from six weeks to ten weeks, the pigs will be accustomed to eating and will get enough food from the trough to keep them growing at about the same rate as before weaning.

"Care should be taken to give the little pigs plenty of exercise, or under the forced system of feeding many pigs will get the Thumps and die. In case this disease appears, shut off the feed for about twelve hours and exercise the pigs.

"The slop of shorts and skim milk should be continued until the pigs are about three months old when the proportions of shorts to milk should be cut to about one pound shorts to three to four pounds milk. It is at this time that other grains, such as corn, barley, etc., can be introduced.

"Experiments show that skim milk is one of the greatest factors that we have in the rapid growth of pigs. If skim milk is not available for any except the pigs that are being weaned, then good alfalfa pasture should be supplied. In case the pasture is not available, then a big armful of green alfalfa should be thrown into the pen for each pig to work over, or the pigs should be given some sugar beets to eat.

"The grain mixture to feed the pigs from three months of age and on depends very much upon the price of the different grains. Crushed wheat, corn and barley chop are about equal in feeding value. Pigs, like everything else, like a variety in their feed so it nearly always pays to make a grain mixture. If wheat is the cheapest and most available feed, make a grain mixture of about five parts of wheat to two parts barley or corn. If corn or barley is the cheapest and most available feed, make a grain mixture of four parts corn or barley and two parts of either shorts or wheat.

"Feed each pig all that it will eat of either of the above grain mixtures made up in a slop of one pound grain mixture to three or four pounds of milk or, if milk is not available to water.

"Under this treatment, if a good individual is had to start with, at the end of six months the pig ought to weigh from 200 to 250 pounds, or even better.

COST OF KEEPING BEEF CATTLE

Investigations carried on with beef cattle at the Missouri Agricultural Experiment Station during the past nine years have shown that the amount of feed necessary to keep beef steers at constant body weight will vary with different conditions. The ration consisted of two and a half pounds of grain to one pound of choice alfalfa hay. The grain was composed of eight parts of corn chop to one part of old process linseed meal.

One 11 months old steer weighing 607 pounds needed 4.7 pounds of grain



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and 1.9 pounds of hay daily to keep at constant weight during one year. A second animal of the same age weighing 736 pounds needed 5.6 pounds of grain and 2½ pounds of hay daily during one-half year. A 2 year old steer weighing 767 pounds kept at constant weight for one year on an average daily feed of 5¼ pounds of grain and 2½ pounds of hay. Another steer of the same age weighing 8 pounds less needed daily 6.1 pounds of grain and 2.7 pounds of hay to maintain body weight. This steer was quite active.

A year old steer weighing 837 pounds needed 6.8 pounds of grain and about 3 pounds of hay daily during 5 months. Two other steers 1 year old, the first weighing 934 pounds and the second weighing 1081 pounds, needed only 6½ pounds of grain and 2 2-3 pounds of hay daily during 2 years. A 2 year old steer weighing 1212 pounds was kept at constant weight for 4 years on the same daily weight of grain and hay as used by the last two steers. Another steer weighing 1065 pounds was kept for over two years at constant weight with a daily ration of 6.1 pounds of grain and 2½ pounds of hay. This last animal was kept confined in a stall while the others had the run of a small lot. The last three steers were very fat at the beginning.

The results when studied with reference to the varying conditions show:

1. The cost is proportional to the amount of active protein (lean muscle and organs) in the steer and not to live weight.
2. It costs less to keep eight 1200 pound steers than to keep twelve 800 pound steers.
3. The season influences the cost. It is highest in the winter and in very hot weather.
4. Previous high living greatly increases the cost.
5. Youth and activity increase the cost.
6. Age and inactivity decrease the cost.
7. A long time on maintenance decreases the cost.
8. Fatness may decrease the cost since the steer can save feed by using its body fat.
9. Thrifty steers need less feed than poor feeders and those lacking in thrift.

Questions and Answers

American Fork, Utah.

Utah Farmer:

Would you recommend the growing of flax? What are the possibilities of seed flax? Is our climate and soil adopted to this crop? If we can grow it successfully what are the market conditions? Is there any special way to prepare it for the buyer?

K. M.

Answered by Dr. F. S. Harris.

Flax has been grown with fair success in a number of places in the inter-mountain country, although its growth has not been extensive. Experiments conducted by the Utah Agricultural Experiment Station both under irrigation and dry-farming have given fair results. The crop grows under conditions similar to those required for the small grains. The price of flax seed varies much more than the price of grain. This uncertainty of price may be one of the reasons why the crop has not become well established in the inter-mountain region.

Salt Lake City, Utah.

Utah Farmer:

Can you direct the writer to any information relative to the curing of lawn clippings that they might be saved during the summer and fed to poultry during the winter?

S. A. Jackson.

Answered by Dr. F. S. Harris.

The clippings from the lawn can be cured in a manner similar to that used for hay, the chief precaution being to have the grass fairly dry before it is covered deeply in a pile. If the pile were large enough the gasses from each clipping could be put on top of the pile each time and it would

be dry before the next cutting was made. If it did not dry sufficiently in this manner, the grass could be spread out in the sun to dry a day or two before being put on the pile. The pile should be covered in case of a rain storm or if a shed is available the pile might be made under the shed.

KNOW HOW YOUR CARBURETOR WORKS?

There are two types of mixing-valves, or carburetors, in common use on engines, which may be named float feed and overflow mixing valves. These names are good because they indicate the means by which the fuel oil is kept constantly at the level of the needle valve.

The overflow mixing-valve is supplied with fuel by means of a pump and has an overflow pipe leading back to the fuel tank. The tank is thus seen to be below the level of the mixing valve. The pump works whenever the engine is in motion, thus keeping a continuous flow of fuel oil through the mixing valve.

The float feed mixing valve is supplied with fuel by gravity or pres-

sure of some other sort. A float in the fuel chamber of the mixing-valve acts as a valve, cutting off the supply when the proper level is reached. Most commercial carburetors belong to this class. There are also mixing

valves which lift the fuel entirely by suction and hold it at the desired level by means of a check valve. These can be placed only a short distance above the fuel tank.—E. R. Gross, Colorado A. C.

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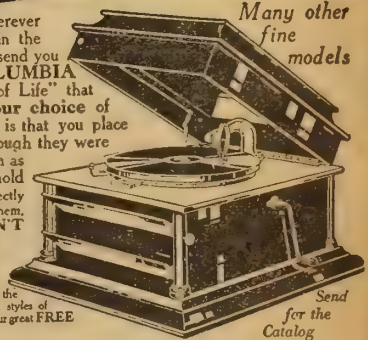
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Agricultural Agent, also by many others.
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Well bred for five years. Gave a fifty
bushel yield last year. Price 4 cents
per pound, F. O. B. Modena.
SETH M. JONES
Enterprise Utah

PLANTING OF ROSES
(Continued from page 7)
pests are not checked the result
would be that the remaining of the
leaves will be only the mid rib and
the veins, while the fleshy part has
been eaten away entirely.
By frequently using the garden
hose, sprinkling the bushes with full
force, these insects may be washed
off, but if this proves not be suf-
ficient a spraying with arsenate of
lead will be a useful substance for
destroying leaf-eating insects.
One-sixth of a pound of arsenate
of lead to 10 quarts of water.
Sucking Insects.
Sucking insects obtain their food
by sucking the sap, mostly on the
underside of the leaves. When bad-
ly infested, the leaves curl and pro-
tect the insects on their under sur-
face. Materials used for destruction
of these insects are: Nicotine-sul-
phate Pyrethrum, Kerosene emulsion
and lime sulphur.
It should be applied with consider-
able force with a fine spray so it will
find its way under the foliage. It
is important that the solution should
be applied on every part of the plant.
Nicotine-sulphate can be pur-
chased in any seed-store, and directions
as to dilute same will always follow.
Pyrethrum (Persian insect powder)
can be used at the rate of one ounce
to two quarts of water.
Kerosene emulsion: Add one quart
of kerosene to one quart of boiling
milk, and stir it until it is thoroughly
mixed, then add twelve quarts of
water to this solution and when this
is thoroughly mixed it is ready for
use.
Lime-sulphur should be used ac-
cording to directions accompanying
the packages.

ENDED JAN. 1ST, 1913



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Its valve-in-head motor delivers full 41 h. p. at 2500 r. p. m.—one h. p. for every 53 pounds of car weight.

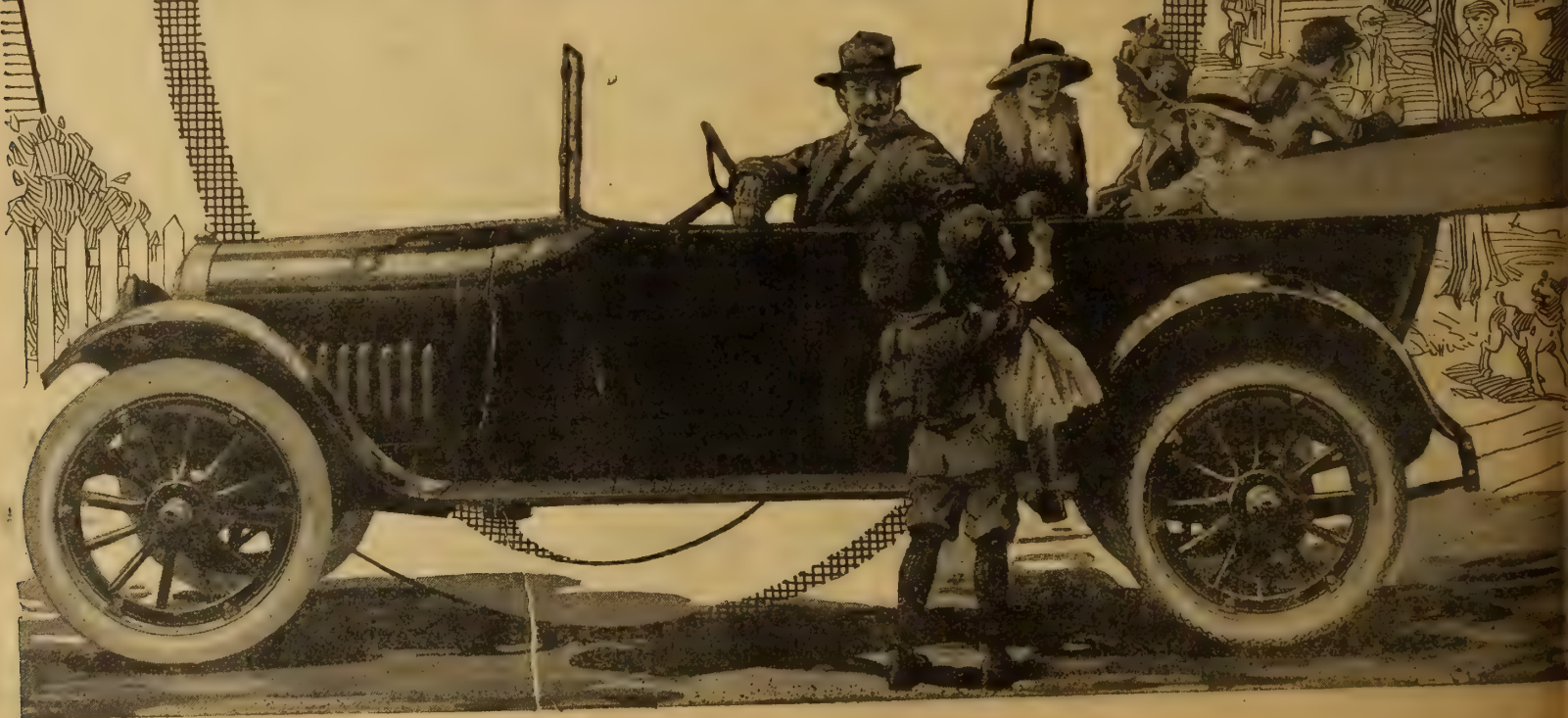
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(52)



THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 33

LEHI AND SALT LAKE CITY, UTAH

MARCH 17, 1917

How a Concrete Road Benefits the Farmer

William F. Long.

Reduced to simple terms, a concrete road helps the farmer haul two loads at one trip instead of one load on two trips. It either doubles the weight of a load or cuts in two the tractive power necessary to transport farm products. With less capital tied up in horses, there is more cash to put to other equipment to produce more profit. The concrete road reduces the strain on horses and lengthens their life. It reduces wear on wagons and harness. Where motor trucks are used, it lessens tire and fuel expenses. It puts the farmer in a state of preparedness to reach markets quickly when prices are low, so he can take his products and get home with more cash than he could by slow hauling on a bad road. It adds to the acreage value of a farm because it increases its earning possibilities.

A concrete road makes all of these advantages permanent by bringing profit to the farmer every day in the form of time, effort and equipment saved. Ready Utah County has sensed the advantages of building a system of concrete roads.

On Wednesday, February 7th, last, the County Commissioners of Utah County, publicly declared in favor of the concrete type of permanent and surfaced highway construction, and promised the people of Utah County that they would inquire into the feasibility of constructing a concrete road from the point of the mountain on the north, to Santaquin on the south, a distance of 50 miles. Due to their word, the commission on Saturday, March the 10th, passed a resolution calling for a \$750,000 bond election to take place on April 17th, at which there is not the slightest doubt, but that the farmers and tax-payers generally, will decide in favor of this most worthy improvement.

A \$750,000 bond issue will cost the individual tax-payer a total of \$1.70 on each \$1,000 worth of his assessed valuation. Just how many concrete roads can be built with \$750,000, no one exactly knows at this time. It has been estimated by engineers, however, that the \$750,000 bond issue will not only take care of the straight highway through the county, but an appreciable number of miles besides.

For the individual tax-payer to arrive

at concrete pavement, laid in the heart of the business section, is still giving efficient service.

Today there are a total of 70,000,000 square yards of concrete roads and pavement in the United States—an amount sufficient to pave a highway, 16 feet wide, for a distance exceeding 7,000 miles. These roads and pavements are to be found in every state of the Union, the states

Concrete Roads, like almost everything under the sun, will wear out sometime—but not soon. The United States Government, which is very conservative, states, that when concrete roads are built properly, they apparently should last indefinitely and not rut.

To be considered permanent, a pavement must have for its foundation either solid rock or concrete.

Rock and concrete possess the property to bridge over or span weak spots in the sub-grade, without which the surface could not possibly maintain its evenness and continuity of surface.

The United States Government issues this statement: "It is generally accepted that roads built with surfaces entirely of concrete, or with a brick pavement and a concrete foundation are permanent."

Of the many many millions of square yards of asphalt paving in the big cities of the United States, supporting enormous heavy traffic, all have concrete foundations, to which these streets owe their ability to support the tremendous and multitudinous loads

which are hauled over them.

Concrete roads require maintenance but not much. Of the 70,000,000 square yards now in the United States, the average cost of yearly maintenance is \$50 per mile, for a 16 foot wide road.

Concrete Roads, laid upon improperly prepared, and non-drained sub-soils, sometimes develop cracks, but these by no means detract from the general integrity and efficiency of the road, and are easily and cheaply maintained.

Concrete Roads are somewhat (Continued on page 9)



Concrete Road in Davis County, Utah, Built by the State of Utah 1912.

at the net cost of the concrete highway system, he must deduct from the above mentioned \$1.70, the price which he is now paying for his present system. This \$1.70 is, of course, independent of any state or government aid which will be forthcoming to Utah County. When it does come—and come it will, it can either be utilized for constructing more concrete roads or for paying off the bonded indebtedness of the county, thereby much reducing the \$1.70.

Concise Facts About Concrete Roads.

Concrete Roads in the United States are now over 24 years old. The first built was at Bellefontaine, Ohio, a city of 8,000 people in 1893. This con-

crete road of New York, Illinois, California, Wisconsin and Michigan claiming the greatest yardage.

In the State of Utah there is the equivalent to a road, 16 feet in width, and 60 miles long.

Concrete roads are among the very few which are truly hard surface. Being un-effected by changes in temperature, their surface is just as hard on the hottest day of summer, as on the coldest day of winter. Most pavements are hard only in winter. In summer time they become soft and pliable, offering much resistance to traffic, and causing teams to pull hard.

Time of Planting Corn

Corn will not grow during as cold weather as wheat and oats. Corn-planting time is, therefore, a little later than the best time for sowing spring wheat or spring oats. However, when seed of perfect vitality is used, it is remarkable how early in the spring corn can be planted and result in good stands and good yields. Seed of perfect vitality will often remain in cold or dry soils for several weeks and afterwards germinate and yield well. Irregular stands are sometimes attributed to poor seed, when dry, poorly prepared spots are the cause. Fields are sometimes seen in which the seed germinated promptly in moist spots but did not germinate in dry spots until rains came.

Where the seasons are long and moisture plentiful, it is customary to wait until the soil is warm before planting. In semiarid regions however, corn should be planted early. With the soil in proper condition it is generally advisable in semiarid regions, south as well as north, to plant corn before danger from frost is entirely past. Corn planted very early usually makes a slow, toign growth and a month after planting may be smaller and look less promising than that planted later. The early planted corn ripens first, however, and usually produces the larger or the better crop. Because of its slow, tough growth corn planted very early is not so susceptible to frost and drought as corn planted later and growing more rapidly. In a series of years the gain in mature corn secured from early planting will more than make up for any injury from spring frosts. Excellent corn crops have been produced from plantings frozen off or frozen back when the plants were from a few inches to a foot or more tall. Corn is not often entirely killed by spring frosts, and if some should be injured the loss is much less serious than that from summer drought or from fall frost.

Early planted corn derives more benefit from the spring moisture supply, becomes well rooted before summer droughts begin, and may ever mature before these droughts become severe.

Where the growing season is very long and warm, plantings made about 30-day intervals increase the chances of hitting the season right and raising some good corn.

LITTLE DIFFERENCE

A man said to a fisherman, with a bitter laugh:

"My friend, your time can't be very valuable. I've been watching you for two hours, and you haven't had a bite."

"My time's worth too much," the fisherman replied, "to waste two hours of it watchin' a man fish wot ain't ketchin' nothin'."—Washington Star.

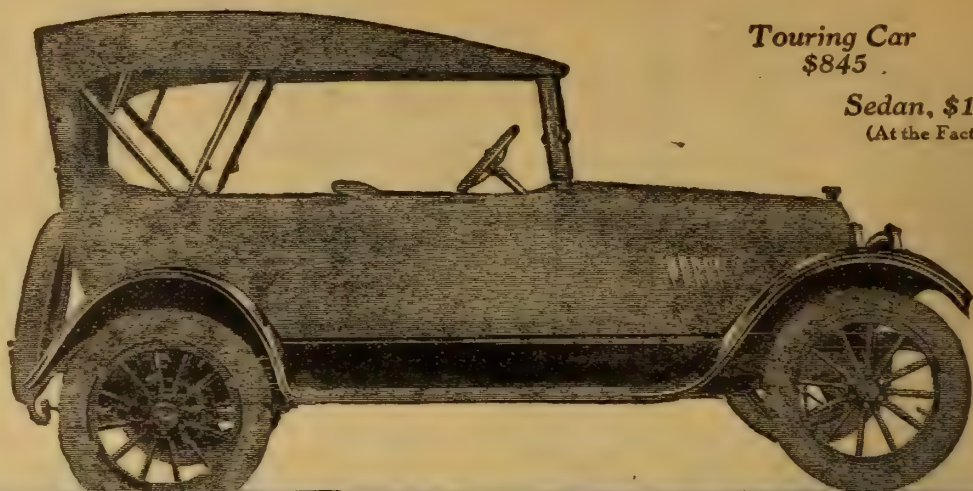
He: "My dear, you must be more careful. The cashier at the bank tells me you have overdrawn your account considerably."

She: "Why, the old story-teller! I haven't drawn a penny out of his old bank. I paid all my bills with checks."

ALWAYS THE OTHER FELLOW

Mr. Kane—Do you really believe in luck?

Mr. Can—Sure! Don't you know lots of fellows who are having it all of the time—one kind or another?



Touring Car
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Sedan, \$1,275
(At the Factory)



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- to do more
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Important Factors In Dry-Farming

By J. W. Paxman, Specialist in Dry-Farming for the Utah Agricultural College.

Clearing The Lands.

By far the major portion of the dry-farm soils in Utah are those which have afforded a habitation for a more or less intense growth of sage brush, rabbit brush and kinder species of vegetation. To clear the lands of this vegetation has been a difficult problem from the first. Perhaps one of the most discouraging tasks in developing the dry-farm is the labor of getting rid of the brush.

It is important because little progress can be made in cultural method with this immense amount of "rubbish" in the way. In most cases it has been a laborious and expensive operation, for men have toiled and sweat, and horses have been fagged and worn out, expensive devices of many kinds have been conjured and brought into service, to play their part, in the hope that Mr. Brush might be easily conquered.

Many hundreds of acres have been cleared with the man and the grubbing hoe at a cost of from \$7 to \$15 per acre. In some parts of the state the Indians have been engaged at this task at \$5 to \$12 per acre. Some men poorly equipped have been seen thus employed upon their homesteads within the last two years. The process is almost infinitely slow and the energy seems poorly spent.

Many patent machines claiming the merit of grubbing the brush cheaply have found their way on the market, but few of them seem to have endured long. Most of them have been tried out and soon abandoned. One of such was the Aldvid Grubber made of steel prongs so as to rotate with a trip and drawn by four horses. It did fairly good work, but some designated it as a "Man-Killer" and hard on horses. The cost of operating it when on the market (over 12 years ago) was from \$2.00 to \$3.00 per acre. We see nothing of it now. And so it is with a score or more of such so-called efficient brush grubbers, both on horses and tractors. In the main they have been a burden and an expense on the operators.

Many home-made devices have been contrived by the various farmers, but the matter of conquering the sage brush cheaply has for the most part been a perplexing and aggravating problem.

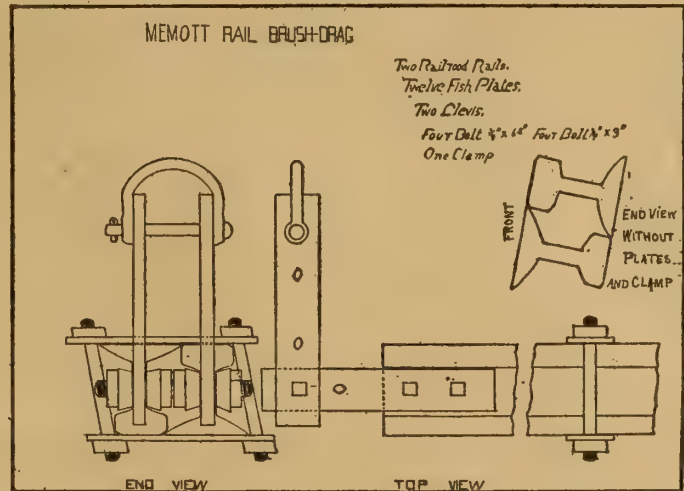
Out of the varied experiences of the past 15 years and the observations of the successes and failures, which have contributed to the subjugation of hundreds of thousands of acres of sage brush lands, we should be able to conclude on a few of the most practical and economical methods of getting rid of the brush.

Some Efficient Brush Grubbers.

The writer is of the opinion that the ordinary beginner cannot afford, and should not attempt to experiment on new devices for grubbing. We are glad to give descriptions of the simplest and most practical implements for this purpose, suited to the man with limited means. Nothing yet produced so far as we have observed, excels the common rail brush drag considering the economic cost.

It is true that it will not make a perfectly clean job under all conditions, as some of the more expensive implements will do, still they serve well and do a fairly good job when the brush is dwarfed or stunted, or large and bushy. It is only where the brush is exceptionally green and slender, or too small to interfere with the plowing, that it will not do "good enough" work for all practical purposes.

The material is generally easily obtained and its construction so simple that the ordinary man can put it together with little cost.



The above cut gives a top view of the end and center of the drag; also the end view showing rails bolted together, a fishplate on outside of each rail, with couple of washers as fillers between the inside plates. This end view also shows the center clamp and the hitching device made of two fish-plates and a clevis. Another end view is given showing the position of the rails without plates and clamps, and the slight tilt they will have when in proper position on the ground.

This grubber or drag is made of two ordinary rail road rails, such rails as have been discarded or out of

(Continued on page 11)

Preparation of Soil For Beet Growing

By Geo. H. Hansen.

In the irrigated portion of the sugar beet belt there are a great variety of soils, varying from the distinctly sandy type through the sandy and clay loams, the silts, and volcanic ash to the heavy black adobe. In the selection of soil for sugar-beet culture it is safe to say that any of the soils that are capable of producing good crops of other kinds will produce satisfactory beets. Thus if your soil is producing good alfalfa, good grain, etc., there is no question that beets can be grown to good advantage.

One of the big factors that enters into preparation of soil for beet growing in our section is that of conservation of moisture. The practice that prevails in some localities of letting the natural moisture escape from the soil, with the idea that more water can be applied when it is needed, should not be followed. The moisture that falls upon the ground in the form of precipitation and is retained by the soil acts upon the plant food day after day and accomplishes most for plant growth. There is a feeling of safety in having an unlimited sup-

tends to put the soil in the best physical and chemical condition for plant production. If done in the fall, there is very little danger of plowing too deep. Other things being equal, plowing to a depth of 10 to 12 inches or even more will give best results. Deep fall plowing not only furnishes a large storage space for winter moisture, but it enables the moisture to get well down below the surface in sufficient quantity so that the beet roots grow to a good length, thereby increasing the tonnage. Ground is in proper condition for plowing when it is neither too wet nor too dry. Under no circumstances should ground be plowed when wet, since plowing under such conditions injures the physical condition of the soil to an extent that often requires years to correct. Plowing should always be done when the soil is in what is called a friable condition, that is, when it is capable of falling apart as the furrow is turned so that there are no air spaces below, as is the case when the ground is too wet or when it is dry and cloddy. Good plowing when the soil is right physically is the only condition that will insure the making of good seed and root beds.

The preparation of the land after plowing consists in those operations which put the soil in the best possible condition to germinate the seed and produce the crop. These operations will depend upon the time of plowing, the condition of the soil, and the climatic conditions. The seed requires a uniformly fine, firm, moist bed in order to produce a quick and uniform germination, which is especially desirable in beet culture. The more quickly the seeds germinate, the more certain is a good stand, which is the first requirement of a good crop. The plants require a fine, firm, moist, well-aerated root bed in order to make a satisfactory growth. The root bed must be fine and firm because the plants must be held firmly in place during their entire period of growth, and the soil particles must be closely in contact with the feeding rootlets. The soil must be moist enough to supply the plants with mineral food in solution and with enough water to promote constant and rapid growth. At the same time there must not be in the soil for any considerable period of time so much water that a free interchange of soil gases can not take place.

Another important point in preparing the land for beets is to see that it is properly leveled. The high places should be worked down and

(Continued on page 14)



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Dairying

COMMUNITY BREEDING AND THE SELECTION OF THE DAIRY COW

I have read a good deal on Community Breeding and find that it is a very good practice.

In selecting a breed one should aim to get one that is predominant in his locality, instead of getting a breed just to make a showing or to have something that no one else has. This is alright for some one who wants a pet or for the pleasure he can get for his, "odity," but for the man who wants to be a breeder for profit as well as pleasure needs to make his choice of breed from one that predominates his locality.

If quite a number, in locality, are breeding the same kind of stock, an organization may be formed to promote their interests, not only will they be able to have better stock, but the community becomes known as a very progressive place where the best can be found.

Crossing breeds is one thing that will spoil a good herd, no matter what the cross may be. A cow is bred for either beef or milk and when crossing is done both types are lost and there may be an animal from the cross that will neither be a milker or a beef animal. Often a man gets the idea that if he crosses Jerseys and Holsteins, he will get the Jerseys quality and the Holsteins quantity, but it is very likely to be the reverse, the Jerseys quantity and the Holsteins quality, which will be a very inferior animal, as far as an improvement is concerned. The same applies when crossing any special dairy animal with a beef animal, neither beef nor milk will be the result of the cross.

A chosen breed is alright for the desired result, but it is the selection of the individual animal within the breed that counts most.

The heavy producing cow of today is artificial. In the beginning of domestication a cow did not give only enough milk for her calf, but by individual selection they have been brought to a point where a cow will give much more than enough to raise her calf.

Any one knows that there are different kinds of cows in a herd; some will give 10,000 pounds or more milk in a year while others will give very much less; some will respond very quickly to extra feed while others will consume much more feed than their milk will pay for. We find by this that individual selection is the only means where by we can get heavy and economically producing cows.

In making comparisons of individuals in a herd, we find that two cows fed alike and every thing else being equal, will vary in their milk secretion. One cow will use every bit of her feed above her maintenance for the production of milk while the other cow does not have that element in her makeup to use her feed for milk secretion, but will put on flesh and fat. In making a selection from a herd one should keep this point in mind. Chose a cow that has that characteristic of using her feed, above a maintenance ration for the secretion of milk.

Leland Wooton.

NAUGHTY SHELL

The busy old lady was calling at the wounded soldier's home. "How did it happen, William?" she inquired.

See the Difference

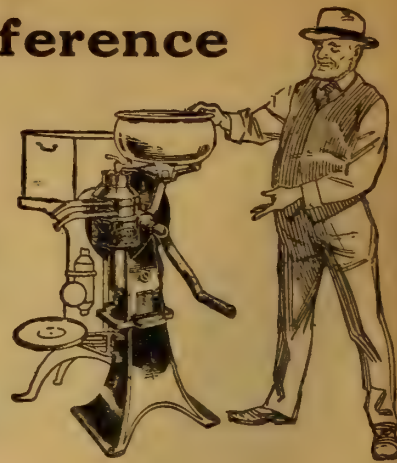
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And five minutes spent in comparing the bowl construction, the size, material and finish of all the working parts, the manner of oiling, the tinware and the frames, will surely convince you of the superiority of De Laval construction and workmanship.

Then if you go a step farther and turn the cranks of the two machines side by side for fifteen minutes, running milk or water through the bowl, you will see still more difference.



Every New De Laval is now equipped with a Bell Speed-Indicator, the "Warning Signal" which insures proper speed and uniform cream.

Speed Indicators can be furnished for use on old style De Laval machines at a cost of \$3.00 each.

And if you will run the two machines side by side in practical use, as any De Laval agent will be glad to have you do—the De Laval one day and the other machine the next—for a couple of weeks, you will see still greater difference in the work of the two machines.

There is a De Laval agent near you who will be glad to explain all the improvements and advantages of the NEW De Laval, and who will set and start a machine for you on your farm and let you prove the difference for yourself.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for any desired information.

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SALT LAKE

"Shell, mum."

"A shell? Dear me. Did it explode?"

"Explode, mum?" replied William

wearily. "Oh, I wouldn't say mum. It just crept up quietly behind me—and bit me."—Country Gentleman.

Some Ways to Help The High Cost of Living

By Jake Miles.

Thousands of men will leave the cities and flee to the farm-life, owing to the high cost of living speed-up of the day, according to some of the eastern philosophers. That the attraction of 12-cent onions and 5-cent potatoes may draw a certain number of people to the farms is certain if the impetus back of the movement is well directed, if it drives tens of thousands from the slummy, idle or unproductive life of the city it will be of inestimable benefit. But the sudden jumping from city life to country life is of little immediate benefit except where shortages occur in the unscientific lines of agriculture. The city chap dropped unprepared on a farm is as clumsy and of as little practical use as a country lad for the first time up against the less lovely city ways. However, it is expected that many men with capital will buy farms. If they use ordinary good judgment in the selection of lieutenants to take personal direction of the intricate work of the farm, the results should be added products to the feed supply of a hungry world.

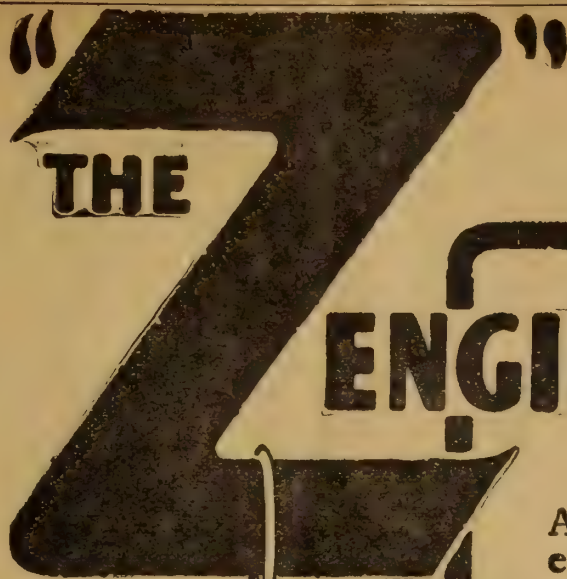
In Salt Lake City, for instance, the office buildings are "lousy," (paraphrasing the expression, but it is the only word to fully describe it) with big, trapping young men teaming with health and vitality. Few of them are producers of anything of worth, either service or otherwise. When I see some extraordinary condition suddenly trying for instance, to eke out living in vaudeville, or in our apacious office buildings and with no worthy motive actuating them, I feel that it would be a god-send should some extraordinary condition suddenly arise to push them out into the road and splendid country, there to at least produce and earn part of that they consume. The only man wanted these days is he who gives service, or is a producer from the ground.

Relative to the new back-to-the-farm movement, Geo. L. Walker, a former statistician of Boston, says: "The American people needed this high cost of living experience to stimulate agriculture, and it is to their good fortune that it came at a time when there was employment at more than living wages for everybody. Good production for a long time had not been keeping pace with the growth of population. High cost of living had arrived and established itself long before the war broke out, and those living good memories will recall distinctly that it continued to hold the center of the stage during the several months of hard times and general unemployment that immediately preceded the explosion in Europe. The country was on its way to a food shortage and the war simply carried it along. If the former had not overtaken the later until some fear of general industrial depression the lesson would have had to be learned under most distressing conditions.

These excessively high prices for food will make farming attractive as a business. They will cause thousands of men to leave the cities and add hundreds of thousands of acres to the millions now under cultivation. Just such a situation as this was necessary, because all other lines of enterprise had become more profit-

able than farming, proportionate to the amount of energy, application and judgment required. Now the country will begin producing a generation of rich farmers. As is usual three things have occurred coincidentally. The matter of an increased food supply has been arranged for, the people have been awakened to the need of more and better transportation facilities and adequate military preparedness all in the same year."

WHERE THE LIKENESS CEASED
"Yes," said the ultra-Oyster-Bay-cifist, "I admit that in many respects



The 3 and 6 H. P. Size
Successfully Operate On

ENGINE KEROSENE

Absolutely the one great convincing engine value of the day.

Fairbanks-Morse Quality at a Popular Price

That's the story in a nutshell. This new "Z" Engine puts dependable, efficient, economical "power" within the reach of every farm.

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Simple—LightWeight—Substantial—Fool-proof Construction—Gun Barrel Cylinder Bore—Leak-proof Compression—Complete with Built-in Magneto. Quick starting even in cold weather. Low first cost—low fuel cost—low maintenance cost. That's the "Z" engine

Go to Your Dealer
and See the "Z"

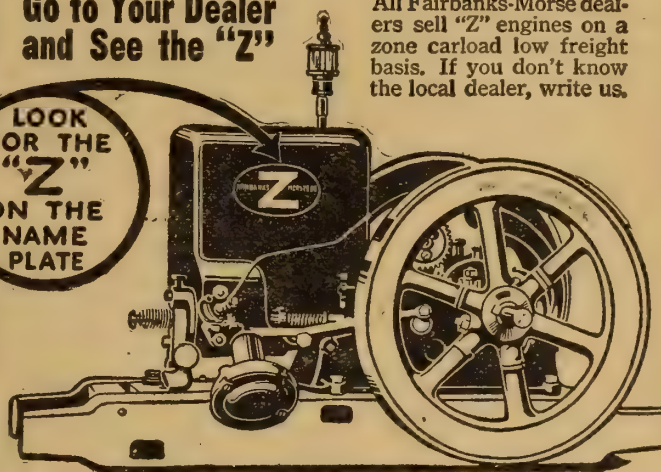
All Fairbanks-Morse dealers sell "Z" engines on a zone carload low freight basis. If you don't know the local dealer, write us.

1 1/2 H.P.
On Skids with
BUILT-IN
MAGNETO
\$39.75

3 H. P. — \$74.50
6 H. P. — \$129.50
ALL F.O.B. FACTORY

Important Dealer Service: When you buy an engine from your dealer, you deal with a local representative of the manufacturers. He shares their responsibility. He stands behind the engine he sells. He's responsible to you. He's at your service to see that you are satisfied. And he's as near you as your telephone any time you want him.

LOOK
FOR THE
"Z"
ON THE
NAME
PLATE



FAIRBANKS, MORSE & CO., Chicago

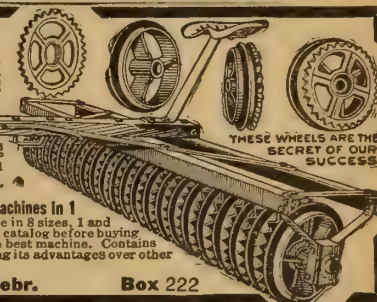
WHEAT, ALFALFA

and other grains yield more where a perfect seed bed is prepared. The Western pulverizes, packs and mulches—makes a perfect seed bed at one operation. Saves seed, time and horse power. Is especially adapted for breaking crust on winter wheat or other grain or in orchards after irrigation or packing rains. It forms the hardest crust into a granular mulch without hurting the grain, and prevents evaporation.

Western Pulverizer, Packer and Mulcher 3 Machines in 1
made in 8 sizes, 1 and 3 sections, prices \$20 and up. We want every farmer to have our free catalog before buying a roller or packer. It proves we can save you money and have far the best machine. Contains full description, price direct to you, letters from many farmers proving its advantages over other makes, and much other valuable information. Send for it today.

WESTERN LAND ROLLER CO., Hastings, Nebr.

Box 222



Theodore Roosevelt is like the Kaiser, but one thing is certain—he wouldn't stand for these U-boats."

"No," retorted the extreme Taftifactor, "The only thing he'd stand for along that line would be Me-boats."



Combined with the
Deseret Farmer and Rocky Mountain Farming
Established - - - - - 1904

Entered as second-class matter in the postoffice at
Lehi, Utah.

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DESERET FARMER PUBLISHING CO.
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Our office at Salt Lake City, Utah,
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address, subscribers should be sure to give their
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address cannot be changed. This is a matter of im-
portance to you and to us.

OFFICIAL ORGAN
Utah Horticultural Society, Utah State Dairymen's
Association, Utah State Bee Keepers' Association
Bear River Valley Farmers' Protective and Commercial
Association, Agricultural College Extension Depart-
ment and Utah State Fair Association, Utah-Idaho
Millers' and Grain Dealers' Association, Utah Fruit
Growers Association.

OUR GUARANTEE
We guarantee every subscriber against loss thru dis-
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this publication. We do not attempt, however, to
adjust trifling differences between the subscribers and
honest responsible advertisers, nor will we pay the
debts of honest bankrupts. Notice of complaint
must be sent us within thirty days from date of the
transaction, and the subscriber must have mentioned
Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent
upon application.

Will some one answer—why is the killing of
one man murder, and the killing of a thousand or
more men patriotism.

Plant some trees this year. Protect your
live-stock while in the pasture from the hot sun
of summer with a few trees.

Compared with the better results that follow,
testing seeds is time well spent. It does not
pay to plant dead seed or weed seeds.

If you are going to travel over ten miles of a
road and one of the miles is bad you must load
so as to be able to get over the one mile of bad
roads.

If you will use the milk scales, they may pull
the scales off your eyes so you will be able to see
the profit that comes from feeding and caring for
a good dairy cow.

Every idle acre on the farm is worth by the
amount of the yearly interest and taxes upon it,
just that much less than nothing. See that every
acre produces something this year and that each
acre produces its full capacity.

Good wagon roads running into the country
are more valuable to a town than an extra rail-
road running through it. If you want to build
up your town and your county, build permanent
good roads.

A new way to be "lucky" read, think, study,
adopt new methods, learn from your neighbors
and adapt their successful ways.

A post card to the Experiment Station will
bring you some of the latest bulletins which should
be a help to you. Send for one you are interest-
ed in. Every farmer should be on the mailing
list of the station and profit by the work our state
and government are doing.

One farmer who had a number of cows pro-
duced an average of 212 pounds of butter fat in 1912.
Just five year's latter by proper care and feeding
they produced 316 pounds. That was beter than
\$30.00 a cow more profit or over \$300.00 on the
ten cows. Did it pay to test and feed for more
profit. This man has no "corner" on that way
of doing his work.

If there is no cow testing association near your
home that you can join, you can weigh the milk
and this will be a good guide to you as to the
value of your cow. A pair of scales will not
cost very much. Join with your neighbors and
buy a Babcock tester and find out what quality
of milk your cows are giving. The time and
money spent will pay you big. You ought to
know what you are getting in return for your
hay, feed and labor.

The time to save money is right now. Anyone
who is living beyond his or her income should
look the future square in the face and ask them-
selves, will it always be thus? An investment
or borrowing money to buy a farm or home is
alright, but to live up to or beyond one's earnings
is a poor policy. Do not deceive yourself by
saying, you will do better in the future, the time
to save money is right now. Spending money is
much of a matter of habit, that is, the way you
spend it. How much did you save last year?
None—well—what is the reason? You must not
spend your future today. Profit by the most
successful men and save part of all the money
you earn.

RAISE MORE POULTRY.

For a number of years we have been importing
poultry products, in other words we have not
been raising enough poultry to supply our own
needs.

Do you know of a better place, all conditions
being considered, than right line for the raising
of poultry. We have the feed, the climate, every-
thing but the desire to do it.

There is a profit in the chicken business, if
one will apply him or her self to it. Like any
other line of work, it must have your attention
if you want to get the best results.

Thousands of baby chicks are sent into the
state each year. Why not raise these at home?
Others seem to make a profit out of this work
why can't you.

Help reduce the high cost of living by raising a
few chickens. If you do not have a hen to set
or an incubator to work, at least buy some baby
chicks and raise some more poultry.

CAN YOU AFFORD THE RISK.

About now you are putting the finishing touches
on your plans for 1917. The kind of crops, and
acres you will devote to each one. Are there
any who can afford the risk of planting their
farms to any one crop because the price at present
seems to be very high. At present the price of
potatoes is extremely high, will this influence

any one to plant extra large acreage Conditions
may change with in a few months and if we have
over done the potato planting what then? This
same reasoning might apply to other crops like
wheat etc. The question is can you afford to
take the risk on any one crop. Our belief is
all farm products will bring a good price but we
want to warn some of our readers against the
idea that they can hope to sell potatoes next fall
for the price they are bringing today.

FEED YOUR STOCK

A careful observer of live-stock conditions says
that many cattle, especially the dry stock, so
called, are dying for want of food and because of
the extreme cold. Feed is high but it is a mat-
ter of poor business at this season of the year to
neglect your live-stock. This is true whether
they are on the range, in the feed lots or what
many call "wintering out." The winter has been
an unusually hard one and the scarcity and high
price of feed has been a serious problem for the
many who did not have the feed or the money to
buy it. The local banker or men of means
should help in this serious condition and see that
our live-stock men are able to buy feed for their
stock.

It will only be a short time until spring grass
will be here. Make some arrangements and feed
your live-stock so they can pull through.

KEEP YOUR BROOD SOWS.

Often some people "loose their heads" when
extreme conditions occur. Such is the case at
the present time. Because of the extreme high
price of hogs and the high price of feed many
are selling their brood sows.

It will not be long until some of these same
people will be trying to get into the hog busi-
ness again. Will they be able to do it when
they change their mind? We always see our
mistake after we have made it, so take our
advice and don't sell your brood sows.

The future outlook is a short crop of hogs be-
cause of high prices and every one selling. So
the price of hogs is sure to remain high. Go to work
and plan your crops so you can produce at a
minimum cost a few hogs and it will be one
of the best ways of marketing your crops at a
good price, you can try.

Again let us suggest, that you do not sell your
brood sows. Plan to raise as many hogs as
possible this year.

VEGETABLES AND SCHOOL GARDENS.

The movement for more vegetable and school
gardens is growing. The first idea of the school
garden was to teach the youngsters thrift and
industrious habits. Now it will be pushed harder
than ever for this reason and also to help supply
the home with food.

The vegetable garden should be found on every
farm, some small plot should be set aside for
raising some vegetables to supply the family
table. It will help to reduce the cost of living.
And another thing there is some pride in having
produced your own food. What is nicer than
fresh vegetables, the kind you like, the kind your
own hands have produced.

Plan now the kind you want, secure your seed
early and when the first chance comes get the
early seed into the ground, such as raddish, let-
tuce, etc.

If a combination of the school and vegetable
garden is made the children will learn how to
do things and the table will be supplied with
vegetables grown by the children.

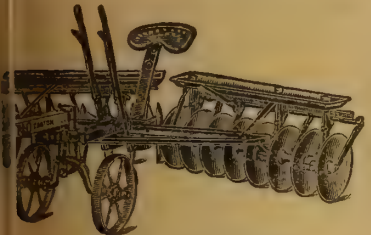
Government Crop Report

summary of March crop report the State of Utah and for the United States, as compiled by the Bureau of Crop Estimates (and transmitted through the Weather Bureau), U. S. Department of Agriculture, is as follows:

Wheat on Farms.
Utah.—Estimated stocks on farms

P & O STAR DISC HARROWS

come in 4, 5, 6, 7, 8, 9 and 10 ft. sizes, 16, 18 or 20 in. discs. Can furnish cut-out or plow-cut discs. With or without weight boxes. Tandem Attachment, Tongue Trucks, Third Lever Attachments, Transport Trucks and Seeder Attachments furnished when ordered.



Steel frame is riveted and braced to the ground in three places, affording great strength. Each, with tongue and clevis in line of draft, to neck weight. Hard maple oil-soaked bearings, cheaply replaced when worn out. A simple scraper against discs, away from disc attachment to be operated by foot levers. Each operated by its own lever and can be set at desired angle. Heavy bumpers relieve the strain of all end pressure. Will do efficient work in dead or back furrows.

Third lever attachment can be furnished which does more penetrating power and a wide range of depths. Highest quality steel discs, hand sharpened and polished. Curved pull rods hold the harrow level at all angles. P & O harrows have been made for sixty years and stand the country over. "It's the Way We Do It."

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**Utah Implement-
Vehicle Co.**
Salt Lake City

Order Now

Place your order now for Spring and summer knit goods. Stocks are complete at the present time, assuring you prompt deliveries. Suits, wear, Hosiery, Lightweight sweaters, etc.

Specialize in approved.
L. D. S. GARMENTS
**SALT LAKE WOOLEN
MILLS**

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PERFECT
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and Address. Numbered if Desired.
BIRDS for Poultry, Pigeons, Turkeys
MAKE STAMP CO. Salt Lake, Utah.

March 1 this year 1,310,000 bushels, compared with 1,892,000 a year ago and 1,673,000 two years ago. Price on March 1 to producers, \$1.49 per bushel, compared with \$.90 a year ago and \$1.21 two years ago.

United States.—Estimated stocks on farms March 1 this year 101,000,000 bushels, compared with 244,448,000 bushels a year ago and 152,903,000 two years ago. Price on March 1 to producers \$1.64 per bushel, compared with \$1.03 a year ago and \$1.34 two years ago.

Corn on Farms

Utah.—Estimated stocks on farms March 1 this year 34,000 bushels, compared with 66,000 a year ago and 63,000 two years ago. Price March 1 to producers, 1.17 cents per bushel, compared with 84 cents a year ago and —two years ago.

United States.—Estimated stocks on farms March 1 this year 789,000,000 bushels, compared with 1,116,559,000 a year ago and 910,894,000 two years ago. Price March 1 to producers, 101.0 cents per bushel, compared with 68.2 cents a year ago and 75.1 cents two years ago.

Corn of Merchantable Quality.

Utah.—The percentage of the 1916 crop which was of merchantable quality is estimated at 75 per cent, compared with 78 per cent of the 1915 crop and 78 per cent of the 1914 crop.

United States.—The percentage of the 1916 crop which was of merchantable quality is estimated at 84.0 per cent, compared with 71.1 per cent of the 1915 crop and 84.5 per cent of the 1914 crop.

Oats on Farms.

Utah.—Estimated stocks on farms March 1 this year 1,120,000 bushels, compared with 1,316,000 a year ago and 1,758,000 two years ago. Price March 1 to producers, 68 cents per bushel, compared with 52 cents a year ago and 50 cents two years ago.

United States.—Estimated stocks on farms March 1 this year 394,000,000 bushels, compared with 598,148,000 a year ago and 379,369,000 two years ago. Price March 1 to producers, 56.9 cents per bushel, compared with 42.7 cents a year ago and 52.1 cents two years ago.

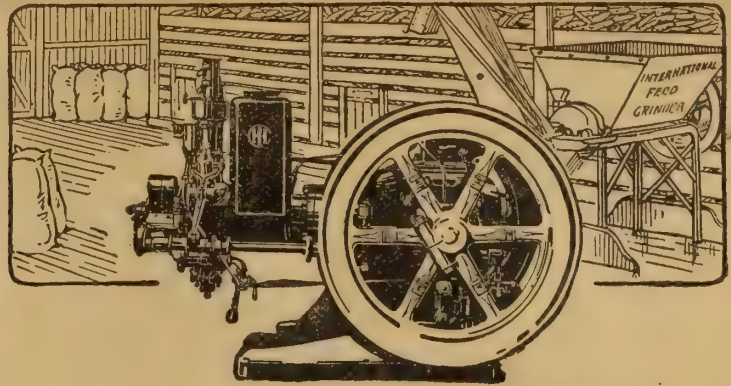
Barley on Farms.

Utah.—Estimated stocks on farms March 1 this year 184,000 bushels, compared with 303,000 a year ago and 374,000 two years ago. Price March 1 to producers, 96 cents per bushel, compared with 66 cents a year ago and 57 cents two years ago.

United States.—Estimated stock on farms March 1 this year 32,800,000 bushels, compared with 58,301,000 a year ago and 42,889,000 two years ago. Price March 1 to producers, 96.9 cents per bushel, compared with 59.6 cents a year ago and 67.7 cents two years ago.

CROP SUMMARY.

Stocks of grain on farms in Utah on March 1st have been reduced to the lowest point in several years. Unprecedented prices for wheat, the keen competition of buyers for foreign markets, and the need for ready cash on the part of the farmers have all been contributory factors in depleting the wheat supply. The long, cold winter and the high prices of hay and forage have made necessary an unusual grain ration for live-stock and used up the reserves of corn, oats and barley. Owing to the heavy eastern demand for high grade western wheat to take the place of northern spring (Continued on page 10)



Cut Down Engine Expense

IT pays to buy a Mogul kerosene engine, both because it is a good engine and because it operates on kerosene. It takes about five gallons of fuel to run a 4-H. P. engine at full capacity for ten hours. Five gallons of gasoline costs close to \$1.00. The same amount of kerosene costs only 40 cents or so. That is a big saving. It makes Mogul power wonderfully cheap.

Remember this too—the Mogul engine that operates successfully on kerosene has got to be a better engine than one that works on gasoline. It must be built more carefully and of better material. It also runs more steadily. It lasts longer. Because it burns kerosene it costs so little to operate that it is far and away the cheapest engine to use.

Get the whole story from the local dealer who handles Mogul engines or write to us for it, but don't buy any engine until you know just what it means to have a Mogul that operates successfully on common coal oil.

International Harvester Company of America

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in the making. You'll be amazed at the whiteness and cleanliness of the Royal Bakery; you'll be delighted with the wonderful sight of thousands of perfect loaves coming from the huge ovens. Be sure to call and inspect this bakery—your bakery.

Royal Baking Co., Salt Lake City, Utah

With The County Agents

COMMITTEE REPORT FOR POTATO IMPROVEMENT.

Because of the serious disease that affect the potato and the careless practices in growing it which threaten to destroy it as a profitable farm product, it has become necessary to make a vigorous campaign for its improvement.

Name.....				Place.....		
Treatment.....				Date Planted.....		
Previous Crop.....				Kind of Soil.....		
Variety	Acres		Yield			
	Field	Check Plot	Selection and Treatment	Unselected and Treated	Difference in Bu.	Val. of Increase

Extended publicity in local papers of these conditions, with hopeful methods of improvement should first be made.

Farm Bureaus should then call meetings of prominent potato growers where the county agent should report these conditions and the Bureau solicit interested co-operators from good representative sections of the county to demonstrate improvement methods. At this same meeting a committeeman in each local Bureau should be chosen to take the names of the co-operators and be the responsible representative of his local Bureau in getting information to his co-operators and seeing that they follow the instructions given to them.

The county Farm Bureau should appoint one committeeman who should be the chairman of the local committees and responsible for getting instructions to them and seeing that they perform the work required of them.

It should be the duty of the county agent to furnish to the chairman of committees a definite and detailed plan with the necessary instructions for the co-operators. He should arrange to conduct demonstrations at local Bureaus for seed treatment and hill selection.

From results in the process of potato improvement the most suitable sections should be sought for the production of the most vigorous seed.

Local fields tests should be made to determine the variety giving most satisfactory yields and best suited to market conditions.

No tubers should be planted which are seriously diseased. All seed potatoes must be treated with corrosive sublimate as recommended by the college.

The potatoes should be planted in soil that has not grown potatoes for at least three years previous, nor where waste waters from infected lands has been allowed to run. It is preferable to plant potatoes in land following alfalfa in a crop rotation.

Hill selection should be the basis for improving the crop. It may be done by means of a seed plot or from the regular field. It will be necessary to select from the regular field the first year. The seed plot should be large enough to grow all the seed needed the next season and should be planted from the very best hills selected from the preceeding season's seed plot.

Where selection is always made from the regular field, it may be done by selecting the best hills before the vines freeze, or it may be done by

marking and eliminating the poor hills.

The seed potatoes should be dug and placed in sacks before they freeze in the fall, and stored in disinfected pits or cellars where they can be well ventilated and kept cold without freezing.

A record must be kept by each co-operator of the place, variety, seed treatment, kind of selection, amount of land planted, kind of soil and yield. A card like the following may be used for keeping this record:

FREE

NO
C.O.D.
NO
MONEY
DOWN
WE
PAY
FREIGHT

This Wonderful GRAFONOLA YOURS FOR 5 DAYS FREE

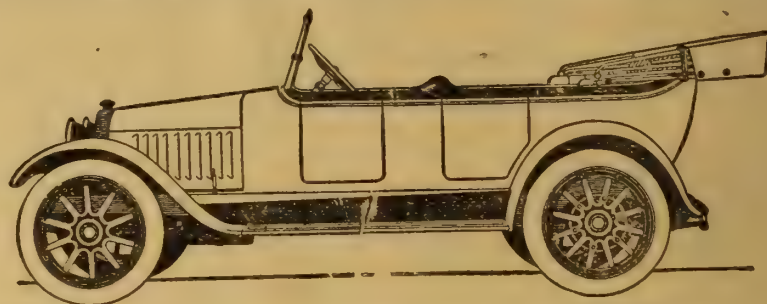
Wherever you live in the Western States we'll send you this world famous COLUMBIA GRAFONOLA with the true "Tone of Life" that simply CAN'T BE IMITATED, and your choice of records from a list of thousands. All we ask is that you place them in your home and use them exactly as though they were your own, for 5 days. Play them—enjoy them as much as you like—invite the neighbors—hold dances and happy parties. Then if you aren't perfectly delighted—if you aren't entirely sure you want to keep them, return them AT OUR EXPENSE and the real WON'T COST YOU A COPPER CENT. EASIEST TERMS if you do keep them.

FREE BOOK Write today, a postal will do, and get FREE 424-page book giving names of thousands of records and showing pictures and histories of the world's greatest singers and musicians. Also beautiful pictures of all styles of GRAFONOLAS, showing them in colors, and full particulars of our great FREE OFFER. Write today. No obligation in writing.

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Chalmers 7-Passenger Touring Car—Price \$1350 Detroit

Full Value for Every Dollar In this Chalmers, 7-Passenger Touring Car

Scan the list of other 7-passenger cars for the equal of this Quality Chalmers. You will not find it. Only in this Chalmers are combined so many real values. You may pay \$300 to \$500 more and find nothing better.

Only a builder of long experience and with a yearly output of thousands could produce this car at so low a price. Only thus can quality of materials and of manufacturing be combined with economy of production. Because Chalmers does this is the reason why this Chalmers 7-passenger Touring Car has no competition at anywhere near its price of \$1,350.

These Prove Quality Claims

Chalmers claims a motor of unexampled smoothness, of unusual power. Prove it by examining Chalmers Lynite pistons, 1/3 the weight of the usual cast iron. These give smoothness, less strain on bearings, admit of higher power. Compare the Chalmers crankshaft with others. It is one-piece, special steel, drop-forged, balanced in motion to a fraction of an ounce.

Touring Car, 7-passenger	\$1350
Touring Car, 5-passenger	1250
Touring Sedan, 7-passenger	1850

See the Chalmers Transmission

Gears are crucible nickel steel, case-hardened and heat-treated. They shift easily, without clashing, and properly used are practically indestructible. The Chalmers type of dry-plate, disc clutch is far in advance of other designs. Chalmers rear axle is the same as used in expensive foreign and American cars. It is silent, efficient, economical.

A Big Beautiful Body

Big—122 inch wheelbase. Beautiful—because graceful in form, hand-finished in Chalmers shops, upholstered in genuine pebble-grain leather, with new Scotch "fluted" finish. Auxiliary folding seats, Pantasote top, curtains open with the doors, fasteners are the "lift the dot" pattern.

Compare Quality—and Price

Think how great the difference between this quality Chalmers and other cars. Realize what unusual value is here offered. You will go much higher in price before you will find any other to please you so well. And all these claims we submit for *your* decision. Come—try the car. Investigate. Then only can you decide.

Roadster, 3-passenger	\$1250
Limousine, 7-passenger	2550
Town Car, 7-passenger	2550

(All prices f. o. b. Detroit.)

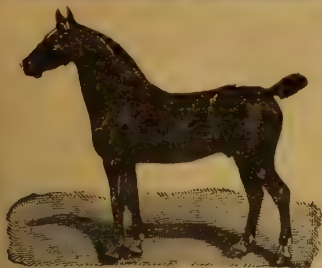
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A Safe, Speedy and Positive Cure for
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As a Human Remedy for Rheumatism,
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Every bottle of Caustic Balsam sold is
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Table and Preserving Sugar**
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results.

This perfect sugar may
now be had in 10, 25, 50 and
100 pound bags. Also a spe-
cial 48-pound bag for parcel
post delivery. Order the size
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dealer.

Be sure it's marked—

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**UTAH-IDAHO SUGAR
COMPANY**

UP TO ALL CLAIMS

"Well, Peleg, how do you find the
encyclopaedia the feller left on ap-
proval?"

"Seems to be all right. Ain't no
errors in it so fur as I kin see."—
Louisville Courier-Journal.

INSTITUTES AND SCHOOLS

The committee on Institutes and
Schools have the following sugges-
tions to offer for your consideration:

1. That Round-Ups be held only at
Logan and the Branch Agricultural
College at Cedar.

2. That all institute or school
work done in counties where there
are county agents be confined to the
county projects.

3. The county agent be given
sufficient help from the college, the
Department, and other sources to
hold at least one meeting in each
town on each project during the year.

4. The County Farm Bureau pro-
ject chairman in co-operation with his
local representatives shall arrange
for meeting places, publicity of meet-
ings, and accommodations of speakers
while in the various towns.

5. Where high schools in county
agent territory hold their own short
round-ups, they should be encouraged
to deal mainly with project subjects.

6. We would suggest that sufficient
publicity of this change be given to
acquaint the people of the State with
the new plan of procedure.

Respectfully submitted,

(Signed) Wm. W. Owens,
Jos. P. Welch,
W. P. Thomas.

HOW A CONCRETE ROAD BENEFITS THE FARMER

(Continued from page 1)

noisy, but no more so than brick,
granite block, or asphalt in cold
weather. A so-called noiseless pave-
ment "pulls hard" in warm weather.
Ask the city man.

Concrete roads are not hard on
horses' feet. Ask the Davis County
farmer who hauls heavy loads daily
over roads of this type.

Concrete roads are first in sanita-
tion; they may be easily cleaned;
they do not disintegrate on account of
mud or dust being tracked on them;
they are just as non-slippery on a wet
day as they are on a dry day; they are
dustless; their light gray color never
blinded any one, and causes driving at
night time to be safe and sane.

Concrete roads in Utah, are strictly
a HOME PRODUCT as all of the ma-
terials—sand, gravel and cement, are
to be found in abundance, in the state.
Furthermore concrete roads may be
built with home labor and home
teams, thereby returning to the pock-
ets of the tax-payers, much of the
money expended for their construc-
tion.

Concrete Roads are not patented,
and for constructing them no royalties
need be paid. They are as free to one
as to another, and every cent expend-
ed for their construction, goes direct-
ly into the road. The product, Port-
land cement, is manufactured by over
100 cement companies, which fact in-
sures sufficient competition.

Concrete roads represent the most
economical, both in first cost and in
long life, of any type of permanent
hard surface construction on the mar-
ket today. The average cost of all
the concrete roads in the United
States up to date is \$13,000 per mile
for a 16 foot width.

—O—

No man should marry a woman that
he does not love, nor should he feel
he must marry a woman because he
loves her,

Look at the Name



EVERY
FARM
SHOULD
HAVE
THIS
"WATCH-DOG
of
WEIGHTS"

and Then the Price

1000 lb. Size

\$14.85

500 LB. SIZE \$12.50

Both Prices
F. O. B. Chicago

"If it's weighed on a
FAIRBANKS there's
no argument"

Because it has Steel to Steel
Bearings, Arrow-tip Beam.
Large Platform—Wide Wheels.

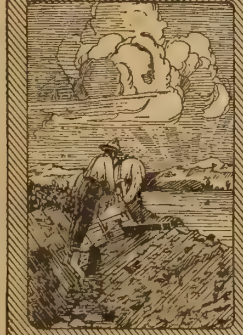
Go to Your Local Dealer—see
the scale and you'll buy it. A
reputable dealer selling a repu-
table scale certainly is a strong
combination.

If you don't know the local
Fairbanks - Morse dealer,
write us.

Fairbanks, Morse & Co.
Chicago



The Martin
WAY



ONE OF A THOUSAND

"I never was a great friend of
the shovel and since I have used
the MARTIN, the shovel and I
have entirely dissolved partner-
ship." F. H. Lytle, Pioche, Nev.

DITCHES!

—Make the NEW and
clean the OLD with the MARTIN
Ditcher, Dyker and Grader. It makes or
cleans irrigation or drain ditches up to 4 feet deep,
any width. Builds dykes; grades roads.

The Martin Ditcher and Grader

is guaranteed to do more and bet-
ter work than 50 men with shovels.
Works in sand, clay, gumbo or
rocks—wet or dry; on side hill or
on level ground. Made in 2, 4 and
6-horse sizes.

All Steel—Reversible
Adjustable for wide or
narrow cut. No wheels,
levers or breakable
parts. Cost low. Up-
keep nothing.

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& GRADER CO., Inc.**
803 Evans Block
Denver - Colorado

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trial to everybody. Write
today for catalog, with full
particulars and introductory
offer on new 1917 Models.

Utah Implement-Vehicle Co.

Salt Lake Agents and Distributors.

Write us.

CROP SUMMARY

(Continued from page 7)

wheat which was almost a failure due to rust, shipments of wheat out of the State have been extraordinarily large. The length and severity of the winter coupled with the shortage of rough feed has worked ravages on the live-stock in many localities. Losses of sheep from exposure and lack of feed are reported quite heavy in some parts of Tooele county. High prices of wool and lambs induced many sheepmen to risk old and unfit ewes on the winter range and losses among this class of stock have been the greatest. Cattle although thin and underfed have wintered fairly well. The earliness of the snowfall caught a considerable acreage of beets still unharvested and the continuation of cold weather and snow made it impossible to salvage any material portion of them. The beets left in the ground all winter will not be fit for sugar making but ought to furnish fairly good stock feed if harvested at the earliest possible moment. It is yet too early to say anything definite concerning the condition of winter wheat, but the heavy covering of snow during the winter will surely not prove harmful. —Edward C. Paxman, Field Agent for Utah.

VACCINE FOR BLACKLEG.

A number of cases of blackleg among live-stock has been reported to us. We suggest that where an animal shows any signs of blackleg you vaccinate at once.

Cattle, as a rule, should not be vaccinated until they are 6 months old. This age they are practically

immune from blackleg, and it has been claimed that when vaccinated before they are 6 months old they are liable to lose the artificial immunity induced by means of vaccination and become susceptible again. Animals more than 2 years old are seldom affected, and the mortality among them is so small as to make vaccination unprofitable. It is the animals between 6 months and 2 years old which should be vaccinated.

Vaccination has no ill effect on calves under 6 months old, but it should be a rule that when very young animals are vaccinated they should be revaccinated before the beginning of the following blackleg season.

The time to vaccinate depends largely upon circumstances. In nearly every part of the country where blackleg is known there is a distinct blackleg season, and the proper time to vaccinate is just before the arrival of this season. Every practical ranchman and farmer, as a rule, knows when to look for blackleg, and as the disease may appear a little sooner or later, according to climatic conditions, it is always better to vaccinate two or three weeks before the beginning of the blackleg season. In some parts of the country it is not unusual that the calves commence dying when only 4 months old, while in others they seldom become affected until they are 8 months old. It is, therefore, much a matter of judgment when to vaccinate and what should constitute the minimum age at which the calves should be treated.

If you will send to the Bureau of Animal Industry Federal Building Salt Lake City, Utah, they will furnish you free of all cost enough vaccine for your use. Direction and how to use it will be sent with it.

It is a shame to allow your animals to die with this disease when there is a known preventative. Any man who will use common sense and careful judgment can do the vaccinating.

FARM LOAN BANK

NOW ORGANIZED

Dr. George Thomas, director of the school of commerce and professor of economics at the Utah Agricultural College has been chosen one of the directors of the Federal Farm Loan Board at Berkeley California, and is named as treasurer of the temporary organization.

Dr. Thomas is well qualified for the position. His training both from a scientific standpoint and practical work, fits him for the job and we are sure he will be a big help in the new system of rural credits. During the winter he has visited a large number of different places in the state and discussed rural credits with the farmers. He knows their conditions and needs.

This farm loan bank is the last on the list of twelve such institutions throughout the country to be opened for business soon under the direction of the farm loan board. No date has been set for the opening, but the presidents of the twelve banks are to confer with the board in Washington within the next ten days and work details of putting the system into operation. The necessary steps into providing capital through bond subscription already have been taken by the treasury department.

"Sir your daughter has promised to become my wife."

"Well, don't come to me for sympathy; you might know something would happen to you, hanging around here five nights a week."

High Prices Will Continue during next year.

It will be to your interest to produce the biggest crops possible, both in field and garden. Our catalogue tells all about Vogeler's Purity Seeds.

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SEEDS

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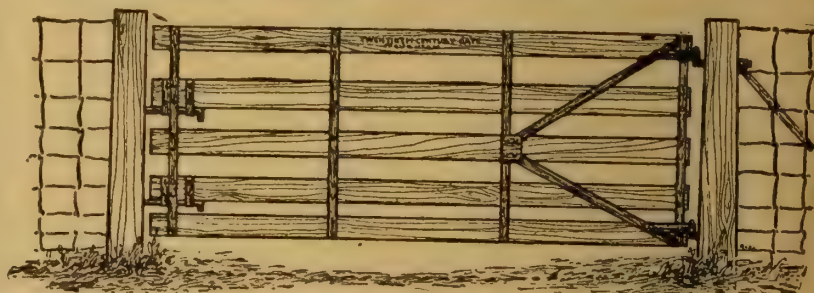
Using Sugar

When housewives use sugar that is made in the west, such as Table and Preserving Sugar, they are securing a product that is not only 100 per cent pure but which also contains 98 per cent of energy when consumed as food—a body builder, a strength builder and an energy builder.

YOU NEED THIS FOOD

The Twentieth Century Gate

Have you investigated this marvel of gate construction? Every land owner owes this much to himself before purchasing a gate. Over 3,000 satisfied buyers in Utah and Idaho.



This Gate Will Mean Longer, Better Service at a Lower Price

30 DAYS FREE TRIAL

OUR LOW PRICES

Give this Gate a trial for 30 days and if you are not satisfied with it in every way, return it to us and we will refund your money. This is a good way to test it out. You will be under no obligation to keep it, if it doesn't suit you.

12 ft. gate, \$7.75. 14 ft. gate \$7.95. Ready to Hang.

We will send you channel steels, bolts, hinges, and lathes, knocked down for one gate for \$5.00; or we will send you two sets for \$9.00, when accompanied by this coupon for \$1.00.

Twentieth Century Gate Co.

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Utah

\$1 COUPON

This coupon is good for \$1.00 when accompanied with the balance of the purchase price of one Twentieth Century Gate.

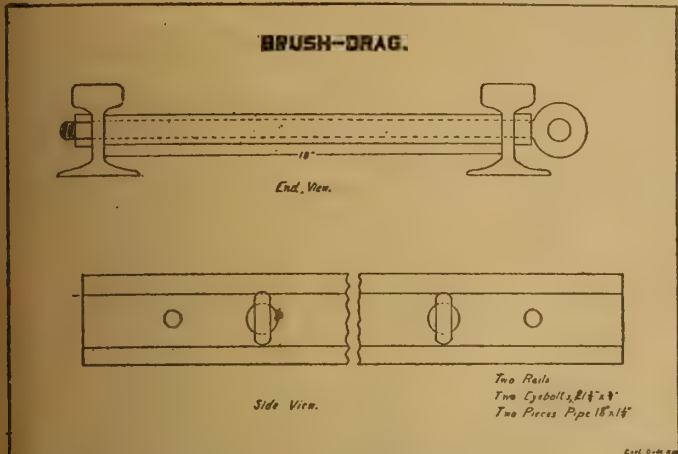
IMPORTANT FACTORS IN DRY-FARMING (Continued from page 3)

and can usually be bought of the road company at a nominal cost. It can be shown that they are to elop lands tributary to the rail-
road, the company donates the rails to them to the farmer. The rail designated the "52 pound rail" is about proper size. The heavier "75 pound rail" is rather too heavy for domestic use. They can be any worth desired depending on the power available for their use. These are

the brush in the convenient or best way for the plow to catch those remaining.

The two operations will pull the most of the brush and maul and mangle the remainder so severely that they wither and dry sufficiently with a few days sunshine, to burn readily and almost completely, especially if a warm, windy day be chosen for the burning.

Caution should be exercised by the driver to follow a few feet behind the drag, in case the hitch should break and thus endanger his legs by the heavy drag flipping back.



ned together at the ends by four fine bolts 3/4 inches x 6 1/2 inches, the four fish-plates placed as shown. The fish-plates are the old and about 5-8 inches x 2 3-8 inches x 21 inches. Common or steel plates can be used when the old fish-plates cannot be obtained. The hitching device, of course, is fastened by means of a 3 inch bolt on to the outer end of the two center fish-plates. Instead of the clamp for the center rail, a chain or heavy wire wrapped several times around the wedged rail will answer.

Without doubt this is the most effective rail drag yet produced. We are indebted to Mr. James E. Memmott of Ephraim for contriving this drag. He operated one of them for several years under various conditions and it always met with good success, accomplishing the work at a cost of less than \$1.00 per acre. His drag is 15 to 20 feet long and is drawn by six farm horses (3 on each end) by two men; completely drag-
ging 15 to 20 acres twice per day. It is better to drag the first time the right way of the plowing and then use for the second operation. By this method the last operation lays

The ordinary rail brush drag as shown in the above cut is the one mostly used and is very simple in construction. It is not as effective as the Memmott drag but it will do a fairly good job under ordinary conditions, when the brush is double dragged. The same process should be pursued as recommended with the Memmott drag—the second operation should be in the opposite way to the first and in same direction of the intended plowing.

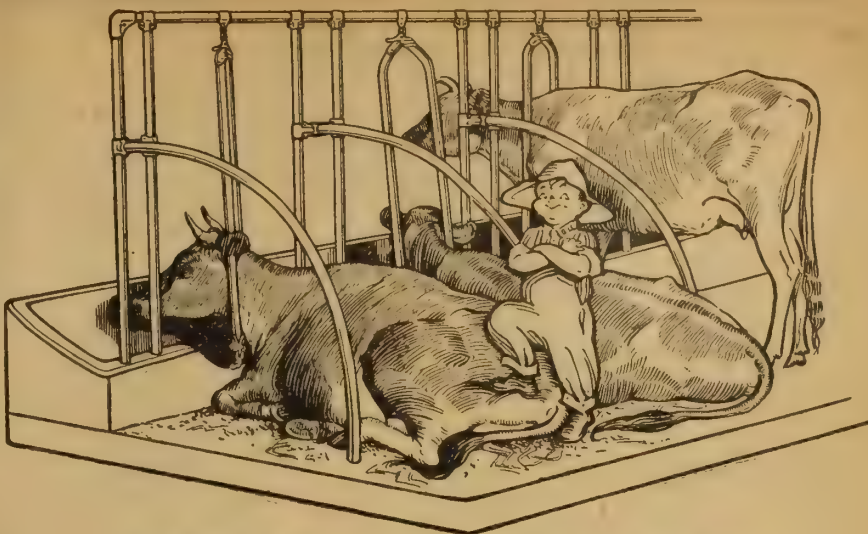
This drag is constructed of two ordinary railroad rails fastened as rigidly as possible by means of two eyebolts 3/4 inches x 21 3/4 inches, using pieces of 1 1/4 inches pipe as shown in the cut. Short chains attached to the eye in the bolts and to the double-trees serve as the hitch. Usually the drivers ride the rear rail stepping off when enough brush is accumulated for "dumping." The length of this drag can be made to suit the power available. It will require one horse to about every 3 1/2 or 4 feet, the draft being a little heavier, than where the rails are bolted one on top of the other as in the Memmott drag.

Either of these rail drags can be used successfully behind the tractor as well as with horses.

DEPTH OF DRAIN TILE
Looking through some back numbers of your paper I saw the answers to drainage queries. J. C. Wheelon, in the issue of 22, 1916. In the discussion of depth of tile drains, a statement is credited to me that "tile should not be over 5 feet in depth in soil." This is not only erroneous but absolutely contrary to the principle continually enunciated by this office. In fact, for years, we have held that tile drains should not be less than 5 feet in depth, and the question of proper depth has been upon more than any other feature of drainage practice. I regret this article did not come to my attention sooner so that I could make

a correction, but I was in California at the time.

In U. S. Departmental Bulletin No. 190, prepared two years before the above mentioned article, I make this statement, "Drains should never be less than 5 feet deep, and experience has shown the depths of from 6 to 8 feet are much more efficient." As a matter of fact in the systems installed directly under supervision of this office drains less than 6 feet in depth have not been installed for years, while in some cases depths up to 16 feet have been given. It is largely a matter of economics. Deep drains are so much more effective and far-reaching that the extra cost is more than saved. The spacing of drains does not seem to vary exactly as the depth, however.—R. A. Hart, Senior Drainage Engineer.



You'll Take a Justifiable Pride In Your Louden-Equipped Barn

and the gratitude of your cows will take the form of increased milk production, while the whistle and song of the caretaker will be testimony of HIS appreciation. Louden Sanitary Steel Equipment eliminates the drudgery of barn work, and makes the care of the stock a pleasure.

You can't afford to deprive your stock of their rightful comfort, your workmen of their rightful convenience, and yourself of your rightful profits—all for the lack of up-to-date sanitary barn equipment. Prices are within reach of all.

Ask for booklet 2 and 3, or call and see the line at your earliest convenience.

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Keep Your Harnesses Tough and Pliable

You would not pour sand in the bearings of your mower to increase its efficiency. But sometimes you unconsciously permit rain and dampness to destroy your harnesses.

Before your harnesses are used again, go to your dealer and get a can of—

DUCK-BACK Harness Oil

and water-proof them. Harnesses treated with Duck-Back Harness Oil are not affected by dampness, because water cannot get into the leather that has been properly treated with this natural harness oil.

Keep your harnesses strong and pliable and maintain their wearing qualities; cut down the repair bills by using Duck-Back Harness Oil.

UTAH OIL REFINING CO.

Refiners

Salt Lake City, Utah

"There are men who couldn't negotiate a loan for ten cents in cash that can easily borrow ten dollars' worth of trouble."

LIVE STOCK

DETERMINING THE AGE OF SHEEP

The age of sheep can be told largely by the appearance of the permanent incisors. The sheep, like human beings, have two sets of teeth; the first set known as "milk" (temporary) teeth, being replaced by permanent teeth. When a sheep has a full set of teeth we find eight of them on its lower jaw in front but none on the upper jaw. The temporary incisors that are characteristic of lambs are quite different from the permanent ones which begin to appear when the lamb is about one year old. The temporary incisors are uniform in size and shape, are long and narrow and constricted at the neck, and are white in color. The first pair of central permanent incisors usually make their appearance when the lamb is from twelve to fifteen months old. The next pair, that is, one on each side of the central pair, make their appearance about one year later, so that the sheep has two pairs of permanent incisors when it is a little over two years old. The third pair appears the next year, making the sheep slightly over three years old when there are three pairs of permanent incisors. The last or fourth pair, that is the corner incisors, appear when the sheep is slightly past four years old. As a rule the sheep has a "full mouth" at five years of age. We often find that the changes of teeth are somewhat irregular, varying with individuals and feed conditions. After four years of age the exact age of a sheep cannot be definitely told by its teeth. However, experienced sheep men can guess quite closely from general appearance. With advancing age, the teeth become wider apart and, when shed, handicap the sheep greatly in grazing and feeding. After five years of age, a ewe is likely to have

a broken mouth and to be less thrifty on that account. Two-year-olds with their first lambs are not as reliable as older ewes, hence the commercial flock should be largely composed of ewes from three to five years old. However, in pure-bred flocks a good breeding ewe is usually kept as long as she will breed.—C. W. Kickman, Idaho Experiment Station.

CARE OF HERD BULL

From birth, the bull should be given the best of care and feed in order that he may make the maximum growth and development. He should receive plenty of skim milk and grain and be treated as well as if not better than the heifer calves.

At the age of five or six months he must be separated from the other calves. From this time on he must receive regular exercise and must be gently handled. When he is ten to twelve months of age he may be given light service—possibly one cow every three or four weeks. From the age of twelve to sixteen months this service may be increased to one cow per week.

A satisfactory feed for a mature bull is alfalfa or clover hay and a grain mixture of corn, with oats or bran. A bull must have plenty of exercise. He does not need to be housed in a warm barn, but is kept in the best condition when given a dry but open shed with a paddock attached so that he can go in or out at will.

Every mature bull should have a ring in his nose. There is some difference of opinion in regard to de-

horning, but it is always safer to handle a bull without horns.

Following are a few 'Don'ts' which can be followed to advantage in handling a bull:

Don't underfeed him when young or keep him over-fat when mature.

Don't use him too heavily before he is mature.

Don't abuse him. You can get better results by gentle but firm handling. Don't tease him or allow children to play with him.

Don't let him get the upper hand any time.

Don't let him realize his enormous strength.

Don't keep him confined. Give him plenty of exercise.

Don't trust any bull at any time. It is the "gentle" bull that does the damage. — Missouri Experiment Station.



Concrete Roads like this one in Davis County, Utah, have been built in all parts of United States

Seventy Million Square Yards of Concrete Paving

In the United States there are 70,000,000 square yards of concrete roads, and streets in use today. Stretched out into a road 18 feet wide this would equal about 7,000 miles. On the same basis there are being added yearly about 2,000 miles. This widespread use of concrete as a road material is alone sufficient to prove the satisfaction derived from it.

Concrete provides a road that is dustless, mudless, and free from ruts and holes. It is open to traffic 365 days in the year. A single team can haul from two to three times the load on the hard, rigid, unyielding surface of concrete that it can haul on an unimproved road. The gritty finish of the surface prevents slipping of horses and skidding of automobiles. The light color makes it safe to use at night.

Such a road as this could be built at small expense from one end of Utah County to the other. The figures for the cost of such a road show that the tax rate would be only 1½ mills, which is hardly any more than is now being spent in a hopeless effort to keep the present roads in good condition. For practically the same amount of money as is now being spent, Utah County can have the best possible roads, always in good condition and needing practically no maintenance. In other words, the cost of building them would be the only cost.

You can satisfy yourself on every one of these points. A free booklet "Concrete Facts About Concrete Roads" will give you most of the information. It will be sent free upon request. Read what this booklet says about concrete roads. The pictures will show what others have done. You can confirm the tax rate by talking to your authorities. When you have satisfied yourself on all of these points, tell your road officials that you are for concrete roads.

PORTLAND CEMENT ASSOCIATION

111 West Washington Street, Chicago

Utah Representative, W. F. Long, 907 Kearns Building, Salt Lake City.

CONCRETE FOR PERMANENCE

GET THE HENS BUSY

It's within your power to get more eggs from your hens, if you feed them—

MOREGG POULTRY FOOD

warms and stimulates the sluggish egg organs to action. Feed it along with other foods. Hens like it, and it never fails to get results.

Ogden Packing & Provision Co.

Ogden Utah

BETTER PRICES BROADER MARKETS

Part Played in Problem by Transportation—National Treatment for a National Enterprise.

IN every part of the country the farmers are turning their attention to questions relating to the handling of their products after they leave the farm. Transportation is a part of this problem. The cost of reaching their markets and the ability to reach them promptly at the right time are important factors in determining the returns from their crops.

Low Freight Rates

Fortunately the American farmer has at his command the lowest freight rates in the world. It costs no more to move a load of wheat 500 miles by rail than it does to haul it five miles from farm to station by team. A ton of farm produce of any kind can travel almost twice as far for the same charge on American railroads as on the government-owned roads of other lands.

The cheapness of transportation is not the whole issue. To meet the needs of the farmer transportation facilities must be ample. There must be plenty of tracks and cars and locomotives and sufficient terminals.

Billion a Year Needed

The railroads are anxious to provide means to take care of all the business they can obtain. But a vast outlay of money is required. A billion and a quarter dollars a year for the next ten years or more must go into railroads to provide the necessary transportation facilities.

During the past few years it has become more and more difficult to obtain even in part, the money required for this purpose. This has been due partly to the poor promise of a satisfactory return on the investment; partly to the uncertainty created by numerous and conflicting regulations.

Regulate For All the People

Nobody seriously proposes that the public regulation of railroads shall be weakened. Certainly the railroads themselves do not. But it is a reasonable proposal that the regulation of this great national business should be handled by national agencies, on national lines, in the interest of all the people, and not by local agencies to serve local or sectional ends.

Regulation at cross purposes by 49 masters—48 states and the federal government—now imposes upon the railroads an annual burden of many millions of dollars of wasteful expense, from which the public derives no benefit. It is of primary importance to the farmer to cut down this waste in order that his products may be moved to market at least expense and with the swiftest possible expedition. The farmer's interest demands free trade among the states.

RAILWAY EXECUTIVES' ADVISORY COMMITTEE

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ANIEL WILLARD, Pres. B. & O. R. R. adv.

Timely Suggestions

Springtime is when your skill as a live-stock man is truly tried. Feeding and caring for the mares, cows, sows, and ewes through the changing weather so they can properly nourish their young and keep their strength and flesh is your problem. The first few days of a farm animal's life are likely to be the most important; be watchful.

Have you taken every precaution and furnished every possible convenience to enable the good wife to handle her summer's work without growing five years older in as many months? Your farm work is a rank failure if you have to cash in the health and strength of your family.

Do not forget the good roads. There should be some understanding between neighbors for the dragging of roads at the proper time. A road drag is not an expensive arrangement, and if used judiciously before roads harden after rains, it will be labor and time well spent. A neighborhood is known by the roads it keeps.

The time to clean out and repair irrigation ditches is before (not after) irrigation starts. If your ditches are not now in tip top shape and plenty big enough—get busy.

This is the year you were to raise a real garden. Do not flunk on this important proposition now. A good garden is one of the best paying departments of the farm; it pays big dividends in improved health for the entire family.

If the women folks want to do something a little extra in the poultry business this year, help them out. One egg or one chicken does not amount to much, but the market price of the eggs and chickens produced in this country in one year would build two Panama canals.—I. D. O'Donnell.

CHILDREN AND TREES

Every child should own a tree. A tree is a symbol of life. It lives. It stands for everything that is noble. It is rooted in the soil and stretches itself toward heaven. It stands for patience, humility, persistence, beauty, courage, and God. The child should plant the tree himself and thereafter watch it grow year by year. He should put his hands on its rough bark and say "This is my tree. I will stand by it, and live up to it."

It is curious how blind we sometimes are to certain ideals because we can not see and handle them. We need something to connect us with the invisible but none the less potent and formative world of aspiration and inspiration. What could be better than a tree?

There is something about the silent beauty of a tree that casts over us a spell of calmness and invincibility. The storms of life may sway us and break our branches; the grim and melancholy autumn may strip us of our brilliance, but the spring will come once more and clothe us in a new glory. So we go on fulfilling the majesty of the law.

If your child owns a tree the memory of its beneficent influence will cling to him through life—Country Gentleman.

CAUSTIC

"Did you see my sunburst last night" inquired the pompous Mrs. Newrich of her poorer neighbor.

"No. I didn't," said the neighbor caustically: "but I certainly thought he would if he ate another bite.—Ladies' Home Journal.



Listening to the Auctioneer

When you stand in the cold wet mud of the spring thaws, you can appreciate real comfort in rubber footwear.

Take care of your feet. It is very important that you should. Let your rubber and woolen footwear be

"BALL (Red) BAND"

Why do nine million people wear "Ball-Band"? Because those who buy it never regret their purchase. They get more days wear at the lowest cost per days wear.

Ask your dealer for a pair of "Ball-Band" Light Weight Rubbers. They are of the highest quality and come in sizes for men, women and children.

If your dealer doesn't sell "Ball-Band," let us know.

Our free booklet, "More Days Wear," will be sent you on request. It shows the right kind of rubber footwear for different kinds of work, also for hunting and fishing.

Mishawaka Woolen Manufacturing Company, 370 Water Street, Mishawaka, Indiana
"The House That Pays Millions for Quality"

American Fence

Woven with a mechanically hinged joint. Big, full gauge wires—full weight—full length rolls. Superior quality galvanizing—proof against hardest weather conditions.

American Steel Fence Posts last a lifetime. Hold fence secure against all conditions.

Sent Free—Our Book, "How to Build a Fence." Dealers Everywhere.

AMERICAN STEEL & WIRE COMPANY
Chicago New York Pittsburgh Cleveland Denver

Awarded Grand Prize at Panama Pacific International Exposition
The Supreme Award of Merit

PREPARATION OF SOIL FOR BEET GROWING

(Continued from page 3)

the depressions filled. A properly leveled field can be irrigated much more quickly and further more, if not properly leveled there will be high spots where the beets suffer from lack of sufficient moisture and low spots where the plants are injured by too heavy watering.

At first thought, drainage in an irrigated section of the country might seem unnecessary, but experience has shown that under certain conditions the constant application of water cause the soil to become water-logged. It is true that in many irrigated sections natural drainage is so nearly perfect that artificial drainage is not necessary. This may be due to the porosity or to the natural slope of the underlying stratum. However in all cases where there is a tendency for the soil to become water-logged, artificial drainage should not be neglected. The water-logging of the soil under irrigation is detrimental to crop production, not only because of the accumulation of so much water in the soil that the required amount of air excluded from the plant roots, but also because the alkali in the soil and water is carried to the surface of the soil and deposited when the water evaporates.

With beet production in mind then it should be remembered that: Sugar beet soil should be selected with reference to its fertility, its physical condition its previous cropping, and its ability to be properly drained and irrigated. The land should be plowed to a good depth in the fall and every effort made to retain the moisture in the soil from the time the previous crop was harvested until the beet crop is laid by, and then the seed and root bed should be so prepared that they will be fine, firm, moist and well aerated.

WEATHER SUMMARY.

The mean temperature for December, 1916, was 23.2 degrees, which is 4.1 degrees below normal; January, 1917, 15.3 degrees which is 10.8 degrees below; and February 25.7 degrees which is 3.9 degrees below. The past winter was the coldest winter as far as records show since 1892, but many report that it was the coldest on the average for over 50 years. The minimum temperatures were not as a rule lower than those previously recorded, but the cold weather persisted for longer periods. The snowfall was also heavy. The early cold weather damaged some fall grain, but most of it was snow covered and wintered well. Stock losses were severe in places due to heavy snows on the ranges and lack of feed. The snow in the valleys at the end of February had disappeared, and farmers in many parts of the State were planning to plow early in March. At the higher stations, between 5,000 and 6,000 feet, the snow was a foot or more in depth at the end of February, and in the mountains it was very deep. As the snow melted in the valleys most of it was absorbed and abundant soil moisture was reported. Almost every correspondent reported that the prospects were very good for next season's supply of irrigating water—Alfred H. Thiesen, Meteorologist.

THAT ENDED IT

She—"But, dear, why do you love me?"

He—"So you have begun to wonder, too?"

To Buy

FARMS

To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

IDAHO RANCH BARGAINS

280 acres, near good town and school, good buildings, good land. Price \$7,000.

240 acres, nearly all irrigated, splendid water right, five room house, barn, other buildings, 170 good cattle, 25 horses, machinery. Price \$24,000.

320 acres two miles from good town, all cultivated excepting 65 acres pasture, two houses, three granaries, stable, 19 horses and colts, five cattle, excellent equipment. Price \$14,000 part cash.

160 acres, near good town, in foot hills. 60 acres plowed, 60 acres pasture land, all fenced. House and other buildings, livestock and farm machinery. Complete \$4,500.

1040 acres ranch adjoining free range, one half under irrigation, all fenced, nearly all under cultivation. Price \$40.00 per acre including 150 head of Red Poll cattle, horses, farm property, farm equipment, machinery, etc. Will give terms.

FEDERAL LAND CO.
Ogden Utah

FREE FARM LANDS

The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our Committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah.

MARKET GARDEN & FRUIT FARM FOR RENT.

50 acres, choicest east bench land with perfect water right, 1200 fruit trees and 30 acres open farming and garden land. House, sheds. Will make money making lease to properly equipped party. Location 11 miles Southeast Salt Lake City.

BURT & CARLQUIST COMPANY
No. 40 So. Main Street. Salt Lake City

RELIABLE FARM BARGAINS

At the present price of farm produce unless you are getting high wages you will readily see that you can make more money farming than in any other occupation. We are to sell you first-class farms at prices that they will pay for themselves after a small down payment. We sold farms last year that practically paid for themselves with a first year's crop. We do not guarantee this on all the farms we are selling, but we do say that each farm will pay for itself in a reasonable length of time.

In southern Idaho we have first-class farms for sale at the present prices situated on the main line of the O. S. L. railroad, right near a first-class town; water system and electric lights, first-class schools, stores; in fact, a place to make permanent home. These farms from 40 to 160 acres, planted to alfalfa or ready to plant potatoes or sugar beets. The sugar company is taking contracts for sugar beets to build a new factory. The lands can be had from \$60 to \$100 per acre, according to the improvements on the land. These lands all ditched and fenced with little homes, granary, barns, other outbuildings, ready to move right into. We can give very good terms on these farms.

Near the town of Tremonton, one of the liveliest towns in northern Utah, have two 40-acre tracts. This land can be had for \$140 per acre; \$100 payment down and terms on balance.

We have another tract of land situated in this neighborhood, with a small home, for \$135 per acre; small payment down and terms on the balance.

We have in the center of the Bear River valley 460 acres of first-class land, one mile from the railroad station. Land is well fenced, surrounded by good farming lands; is in brush. Can be had for the price of \$35 per acre.

780-acre dairy farm at Woods Cross, 10 miles north of Salt Lake City. Head of first-class milch cows, head of large work horses, 40 of heifers, good house, barn, and other outbuildings. Land can be had, including all improvements and implements, for \$35 per acre. If you are looking for a first-class dairy farm or near the city, you can't afford to overlook this chance.

\$450 per acre will buy some first-class, garden tract, on the car line, lying immediately adjoining the city on the south. This can be had for a small payment down and a long time on the balance. If you are living in the city and care to get out in a suburban home, this will appeal to you.

We exchange Salt Lake City homes for farms, and we exchange farms for Salt Lake City homes.

KIMBALL & RICHARDS
"Land Merchants,"

56-58 Main Street,
Salt Lake City, Utah,
Phone—Wasatch 963.

Name Your Own Price for a rich Irrigated Farm at Mosida, Utah County, Utah

This wonderful farming project, in the most fertile valley in Utah, will be **SOLD AT AUCTION** under order of the District Court, on Monday, March 19, at 10 a. m.

Farmers---Come and Bid!

This is positively the greatest opportunity ever offered in Utah to buy first class irrigated lands at a fraction of their actual value.

Adjoining lands were sold at \$100, \$150 and \$200 per acre. You may be able to buy these farms as low as \$40 to \$60 per acre. Offered in units of 40 acre farms.

SPECIAL NOTICE: The Mosida Hotel, Canal System and all other property of the Mosida Fruit Lands Co., will also be sold at public auction. Don't miss this opportunity!

For full particulars see Legal Notice in Thursday's Deseret Semi-Weekly News or write **AT ONCE** to

H. C. ALLEN, Receiver

1401 Walker Bank Building.

Salt Lake City.

IMPORTANT NOTICE

Owing to unfavorable weather conditions, the above **AUCTION SALE** will be postponed to the same hour and place on Monday morning, March 26, 1917.

H. C. ALLEN, Receiver.

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

BABY CHIX

from the best proven egg laying stock
S. C. White Leghorns and R. I. Reds.
Get our Circular.

GUHAMA
BATES & SONS
POULTRY and FRUIT FARM
PROVO, UTAH. R.F.D. NO. 1.

FOR SALE CHEAP

Two successful incubators, size 320 egg.
Also one Jubilee, size 500 egg. Good as new.

J. B. TUTTLE
Box 286 Mantl, Utah

BABY CHICKS

We are now booking orders for
Spring Delivery in White Leghorns,
Brown Leghorns, R. I. Reds, Barred
Rocks and Black Minorcas. Anconas
also.

THE ORLAND HATCHERY
Orland, Glenn Co., California.

BABY CHICKS

S. C. W. Leghorn chicks from real profitable egg producers. Our chicks are vigorous and will thrive because our stock are healthy and because no pullets' eggs are used for hatching. Our hens lay all winter. Send for booklet.

MOUND VIEW FARM
R. D. No. 2 Brigham, Utah.

4 BEST 4 EGGS 4 BEAUTY
R. C. Rhode Island Reds, White Wyandottes, S. C. Black Minorcas and White Leghorns.

Bred for Eggs and standard requirements. Better start right. Eggs guaranteed to hatch or replaced free of charge. Write for descriptive folder and prices.

E. C. BLANPIED
Box 29 Milford, Utah

\$1,000 Profit Per Acre

Growing The Alton Improved Red Raspberry.

Doesn't winter kill, hardest of all, the most productive of any raspberry known. It commences to ripen its enormous crop the 1st of July, and continues to bear heavily during July, August and September. Enormous size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the old common sorts as the self binder is ahead of the old reaper-hook. One acre is worth more than thirty acres in corn plants. Sold with a three years guarantee, money back if not as represented. If desired I will let you have them on one, two, or three years time. Let me help you get started in this pleasant and profitable business. This berry is very highly recommended by Prof. Robert H. Stewart, County Agricultural Agent, also by many others. Only a limited number of plants left. Write me for free pamphlet, telling all about this wonderful berry, a postal will do. Be quick before they are all sold.

H. A. PINEGAR,
Wellington, Utah.

ALL IN DUE TIME.

Patient—Doctor, what I need is something to stir me up—something to put me in fighting trim. Did you put anything like that in this prescription?

Doctor—No. You will find that in the bill.—Judge.

Now is the time to subscribe for the Farmer.

BABY CHICKS

From healthy, vigorous, prolific stock—Reds, Minorcas, Barred Rock, White Leghorn, Brown Leghorn, Buff Leghorn. Now booking orders for spring delivery. Prices consistent with quality.

ARCADY PLACE HENNERY
A. T. Smurthwaite, Manager.
Wellsville, Utah.

BABY CHICKS

All kinds, good stuff. Eggs for setting from Prize Winning R. I. Reds, \$1.50 to \$4.00. All kinds chickens handled. Agent for De Laval Separators. **OGDEN FEED CO.**

J. H. Shafer, Prop.
Ogden Utah

FOR SALE

S. C. Brown Leghorn eggs for hatching from bred to lay strain. Free range stock. \$1.00 for 15; \$5.00 for 100 delivered. Fertility guaranteed.—D. Stratton R. D. 1, Box 207, Provo, Utah.

Registered Stallions FOR SALE

One Black, coming three year old Stalion. One Grey, coming three year old Stalion. One Brown, coming two year old Stalion. Four Black, coming two year old Stalion.

All registered in the Percheron Society of America Stud Book.

All strictly first-class Stallions.

Will be sold at a very reasonable price considering the quality,

All stock home raised.

W. S. HANSEN
Collinston Utah

RAG APPLE KORNDYKE 13TH

BULLS FOR SALE

From A R O dams which we are offering at reasonable prices, write us.

NELSON BROS.

Richmond Utah

FOR SALE

First class Registered Holsteins Bulls, ranging in age from two months to one year. Highest class breeding. Farmers' Prices. **STATE INDUSTRIAL SCHOOL**
Box 41, Ogden, Utah.

FOR SALE

Poland China Hogs for sale. Both Sexes with papers.

A. C. ANDERSON
Ephraim Utah

SAVE MONEY ON YOUR LUMBER BILL. WRITE US. PACIFIC COAST SAWMILL COMPANY, Portland, Oregon.

FOR SALE

S. C. White Leghorn eggs and baby chicks from the choicest imported stock obtainable. Eggs \$1.50 per 15, \$3.75 per 50 and \$6.00 per hundred. Chicks double the price of eggs.

Satisfaction or Your Money Back.

EDWIN BRICKERT
Beaver Utah

BIG TYPE

Poland Chinas

Stock from Fesserringer's and Pfanders herds the greatest in Iowa. Big boned, strong, easy feeding animals that produce big litters.

Eleven Great Sows

to farrow in April, bred to a son of Fessy's Tim and the great King of Wonder 1,180 pounds.

WEANLINGS FOR SALE

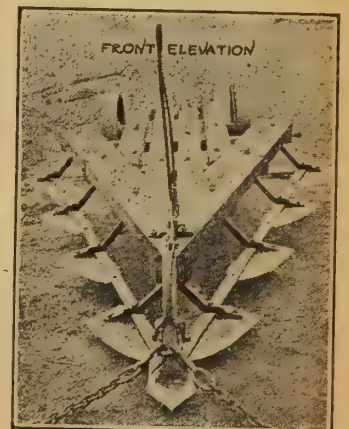
at reasonable prices. Also Head boars (4) ready for service, bred in the purple and look right.

Write your needs to

EARL BENNION

Breeder of Big Type Polands
Taylorsville Utah

THE HURST GRUBBER



The Hurst Grubber is one of the most practical implements that any one can buy who wants to clear new land of sage brush, grease wood, etc. The grubber is 12 feet long with a 6 feet 8 inches cutting width. Take six horses to operate it. Does not clog up with dirt. Blades are reversible. Depth can be made from 1 to 5 inches. Flange wheels hold grubber so it will not skid around.

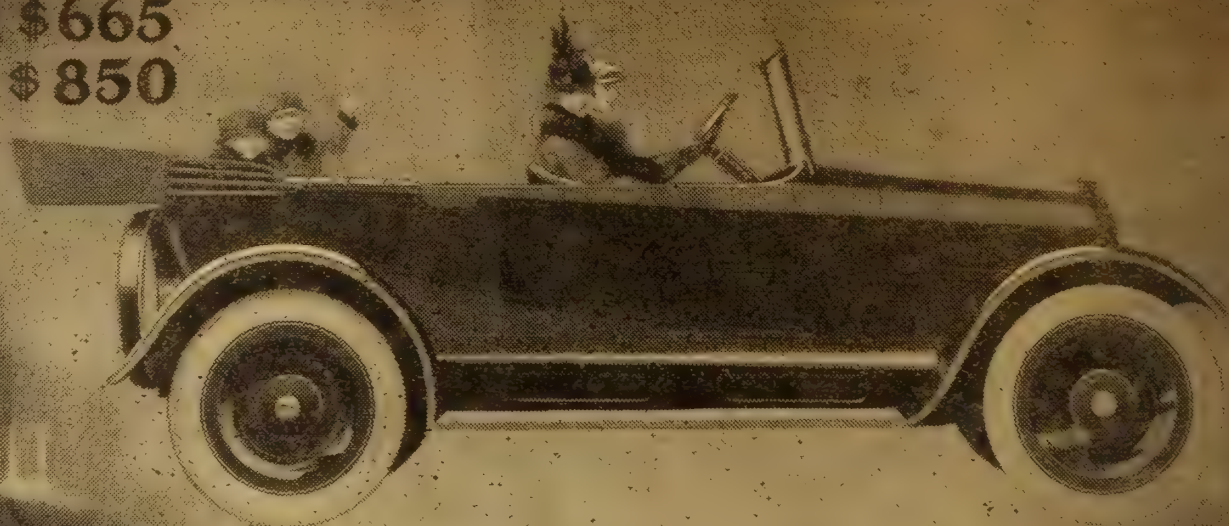
GUARANTEE

This implement is guaranteed against defective workmanship and material, and to do good and efficient work under fair conditions. If for any cause proper results are not obtained, please notify the company of existing trouble and further instruction will immediately be forwarded, and then, if necessary, a man will be sent to prove its efficiency. Let us send you some testimonials of those who have used our grubber.

Only a limited number on hand and orders must be placed at once. All shipments are made from Provo, Utah. For terms and prices write to Hurst Grubber Co., Fairview, Utah.

LIGHT FOUR \$665
BIG FOUR \$850

Toledo



Light Four		Light Six	
Touring	- \$665	Touring	- \$985
Roadster	- \$650	Roadster	- \$970
Country Club	- \$750		
Big Four		Willys-Knight	
Touring	- \$850	Four Touring	\$1285
Roadster	- \$835	Eight Touring	\$1950

All prices f. o. b. Toledo
Subject to change without notice

—two minds with but a single thought

Every indication points to a demand very much in excess of the possible supply of automobiles this year. We are prepared.

This year we apply the economies of vast production for the first time to a complete line of automobiles—an end toward which we have been working for eight years.

Light Fours, Big Fours, Light Sixes and Willys-Knights, including the marvelous Willys-Knight Eight, are built and sold with

- one executive organization,
- one factory management,
- one purchasing department,
- one sales force,
- one group of dealers.

There is now an Overland or Catalogue on request. Please address Dept. 958.

a Willys-Knight for every class of buyer.

Every one of these beautiful cars is a better car—better in appearance, in performance and in riding comfort. One of them is the car of your dream under the evening lamp.

See these cars now. Get a car yourself this spring.

The Willys-Overland Company, Toledo, Ohio

Manufacturers of Willys-Knight and Overland Motor Cars and Light Commercial Cars

"Made in U. S. A."

Every dairyman who feeds ten cows or more should provide enough silage to feed at least six months each year.

YOUR SILO

whether it is 100 feet high or 30 feet—can be filled with entire satisfaction with the

BLIZZARD

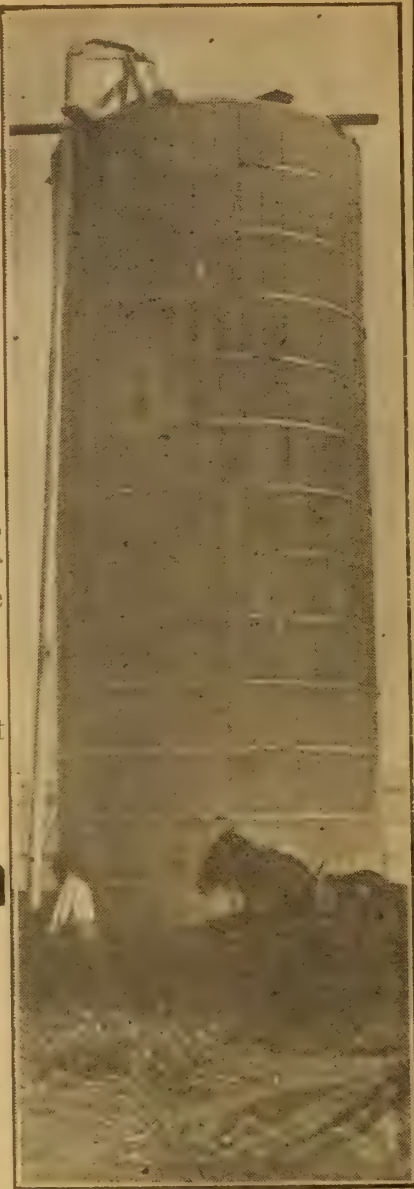
Ensilage Cutters

Side Picture—Filling a 35 foot silo with a L-9 cutter and a 5 H. P. Gasoline Engine.

Below—A close view at cutter and engine.

Inter-Mountain Concrete Co.

Distributors for
State of Utah
521 Eccles Bld'g.
Ogden, Utah.



50 % PROFIT

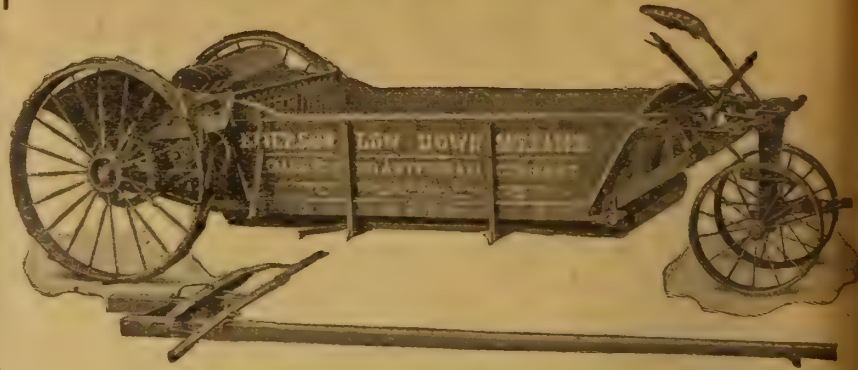
ON DAY OLD CHICKS

When you hatch them in a **Buckeye** from your own flock instead of shipping them in from the outside. Let us prove it. Send for full particulars today.

PORTER-WALTON CO.

Salt Lake

Emerson Low Down Spreader



Built in 50 and 700 Bushel Sizes

The Emerson Low Down Spreader is equipped with an all metal beater of sufficient weight and strength to carry it through the materials it has to shred and pulverize. We emphasize the fact that the Emerson is the strongest Spreader made. The main frame and all other parts except the sides and apron slides are of steel. The main frame is steel trussed and braced, the cross rods keep the frame perfectly square and true. Large heavy steel sills add both strength and long life to the Spreader. The Emerson Spreader is furnished with or without the wide spread attachment, which when used will make an even spread on the ground to fully six inches outside of the drive wheels.

Write us for catalog.

MILLER-CAHOON COMPANY

Murray, Utah

Idaho Falls, Idaho

Our Service

And What It Means To You

**YOU CAN SEE BEFORE
YOU BUY**

Have you ever considered the advantage of having, practically at your door, a stock of first-class implements that can be inspected thoroughly before a purchase is made?

It is a human trait to want to see before we buy. When we were kids we swapped knives "sight unseen," but the novelty of this manner of transacting business loses its attractiveness when we consider that implements cost real money and are not an every day purchase.

One of our jobs in conducting our business in this community is to set up the machines we sell and see that they are properly adjusted before they go into your field. After they are set up they can be examined by you—you

know just what you are getting because you see the implements with your own eyes. When the goods leave our store our interest does not end there—but we'll tell you something about that later. We'd like mighty well to show you what we have in stock and give you a description of what we can get for you promptly if we haven't it here.

Drop in the next time you are in town. We are always glad to see our good friends—and to get better acquainted with those we don't know so well.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

ESTABLISH

1904.

PUBLISHED

EVERY

SATURDAY

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

COMBINED WITH THE DESERT FARMER AND ROCKY MOUNTAIN FARMING

ONE DOLLAR

A YEAR.

FOREIGN

SUBSCRIPTION

\$1.50.

VOLUME XIII.

LEHI, UTAH, SATURDAY, MARCH 24, 1917

No. 24

Crops For High Altitude

Winder, Utah.

Editor Utah Farmer:

Dear Sir: Will you please answer through the columns of your valuable paper, a few questions that may help us to solve some of the problems that are vital to those who are making use of the high altitude portions of the state. The Experiment Station work of the Agricultural College has covered quite generally the needs of the average conditions of altitudes from 4,000 to 6,500 feet but there are hundreds of thousands of acres from 6,500 up to 8,000 feet altitude that are being taken up by the homesteaders largely for arid farming. The land is good, the precipitation generally is sufficient, but the climatic conditions in the matter of short growing seasons, require special adaptation to these conditions of varieties planted, the following questions are to apply to altitudes, of from 7,000 to 7,500 feet altitude, where the soil is largely a clay loam.

1. Would you recommend the Irish Coblér, as a proper potato for these conditions, if not what would be better?

2. What variety of wheat would be best, as spring wheat for early maturity and good yield.

3. What beardless variety of wheat would you give first place as a Fall Wheat?

4. What preparation of the soil will best hasten maturity of crops where seasons are short?

5. Can you recommend a barley for fall planting, where the snow covers the ground most of the winter?

Respectfully,

David W. Woodard.

Answered by Dr. F. S. Harris.

It is difficult to say what crops can be grown to best advantage at your altitude, but in general, root crops do especially well under conditions such as you describe. Canada field peas should also do well. Answering your questions in order:

1. The Irish Cobbler is a good variety of potato, but there are a number of other varieties that have done equally well in most parts of Utah, for example Idaho Rural, Bureka, Russet Burbank, Pearl, and Peerless. Variety adaptation is usually local and experience well determine which variety does best under your particular condition.

2. The Marquis spring wheat has been bred especially for short seasons in Canada. It has an excellent quality and I believe will do well under your conditions. Kubanka, which is a spring Durum wheat, would probably give good results.

3. Of the fall beardless varieties, Phirka, Koffod, and Bluestem are recommended.

4. Drainage where needed, fall plowing, and the keeping off of excessive water will help in getting the full

(Continued on page 11)

The Hog Wallow

Many discreditable things have been said of the hog. He is not filthy by choice, and provides for himself a wallow in the mud simply because his keepers have not provided a better and cleaner one. A concrete hog wallow not only adds to the comfort of hogs in hot weather but accomplishes also the purpose of a dipping vat in which the animals themselves do all the work. Medicated solutions can be mixed with the water in the tank, or germicidal oils used which, floating on the water, accomplish desired medication.

Some persons have made hog wallows by simply applying cement plaster directly to the earth walls and floor of an excavation. Such con-



Contentment on every face. The hog uses or makes a mud hole his wallow only when his owner neglects to provide a better one.

struction can at best be but temporary, while if concrete is mixed and placed according to proper practice the results are permanent, and cheaper in the end.

Hog wallows should be built by observing practically the same principles that would apply in constructing a watering trough or tank.

If the site where the hog wallow is to be built is well drained, the soil on which the floor is laid need have no special preparation other than being well compacted before the concrete is placed. At one end of the wallow a pavement slab is provided so that when the animals leave the wallow, the immediate vicinity will not become a mudhole. To make it easy for the hogs to enter and leave the wallow, the floor slopes upward at one end and the surface is grooved to provide a better foothold for the hogs when they leave the wallow. An apron is shown placed all around the pavement slab to prevent the hogs from rooting underneath.

Corners inside the wallow should be slightly rounded so the pool can be easily and thoroughly cleaned when

(Continued on page 6)

Protecting Against Frost

In certain districts in Utah where fruit is raised on a commercial scale, the growers heat their orchards in the event of frost. Frost forecasts are issued by the Weather Bureau Office at Salt Lake City 24 or 12 hours in advance. To protect the orchard properly and to take advantage of the short notice, orchardists should have their heating devices in their orchards all charged and ready for lighting. Indeed, it is advisable for the farmers to practice a little at quick lighting by having a drill some night when frost is not expected. It is not necessary to let the pots burn after the drill.

The Weather Bureau issues a forecast each morning, and in the event

Hatch The Chickens Now

The poultryman makes his greatest profit from the chickens which are hatched before May 1. The early hatched cockerels are sold as broilers when the broiler market is at its best. The flood of late hatched broilers brings price down and congests the market. The greater returns received from early hatched broilers go far toward defraying the cost of raising the pullets. These pullets in turn begin laying when eggs are bringing the highest prices and when there is the greatest shortage of strictly fresh eggs.

Still more important, early hatched chickens grow more rapidly than those hatched late in the season and are much less likely to become sick. The late hatched chickens always are the first catch cold and spread disease throughout the flock. Chickens hatched late in the year will not mature before cold weather and usually will not lay until well into the winter, or even toward spring. This means that they will have to be fed and carried over for several months at a constant expense, with no return, and this at a time when feed is at its highest.

The early hatched pullets can be developed to a large extent on range, and a saving in grain feed is possible in this way.

The highest producing pullets are those which begin laying early. To get into the 200-egg class a pullet must lay 60 or more eggs before March 1. In order to do this, pullets must be hatched before May 1, so that they will begin laying by the 1st of November. In this section of the country it is advisable to begin hatching not later than March 1 and to continue hatching at intervals through March and April, so that pullets of different ages will be coming on, and the broilers will not all be ready for market at the same time.

The American breeds (Plymouth Rocks, Wyandottes, Rhode Island Reds, etc.) should be hatched earlier than the Mediterranean breeds, such as the Leghorns, Minorcas, etc., because they take about one month longer to mature. Pullets of the American breeds will begin laying at about 7 months of age, and those of the Mediterranean breeds at about 6 months.

It is often difficult to get enough broody hens to set the eggs early. This may be partly overcome by setting the earliest eggs in an incubator and putting those eggs under hens a few days before they are ready to hatch. A hen usually can brood from one and one-half to two times as many chickens as she will hatch, so that additional chickens hatched in the incubators can also be given to hens which are hatching eggs at the same time.

Early hatching will produce more

(Continued on page 10)

THE PRICE OF FRAM PROGRESS

Before oats or wheat was extensively grown in this country there were no oat and wheat smuts; or, if there were plant diseases in some localities, they did not spread very fast because fields were small and far between. New sections of country were opened up and it took many years before the common diseases of our ordinary farm crops secured a strong foothold. Then, too, land was cheap, and if crops did not yield up their expected limit, it didn't matter so much because the investment was small and operating expenses low. No one paid much attention to the causes of poor yields—a good many considered them providential.

The codling moth that destroys our unsprayed apples today had not reached the newer sections of country and so it was with many other insect pests. In those early days men didn't raise 300 or 400 hogs on a quarter sec-

tion of land, or a thousand to a section, as is common today in many localities. Two or three sows were about as many as a man on a quarter section kept and from those he raised fifteen or twenty pigs. Perhaps half a mile away there was another small herd; perhaps it was still smaller. The chances for the spread of cholera, if it did break out in a herd of two, were small as compared with the present when there is a hundred times more traffic on the roads and ten times more hogs.

In early days flax was raised in the eastern states, but it soon became unprofitable in those sections and gradually moved westward to the new land where it did well only to give out and have to find a home farther west. When it finally reached North Dakota a scientist in that state discovered the reason why flax could not be grown on the same soil, year after year, as can wheat and other grains. He found that a fungous disease was carried with the seed from one farm to another and from one section of country to another and that this same fungus was able to live in the soil for six or seven years, ready to infect the next flax crop that might be seeded on that land and destroy the plants as soon as they put their heads above ground. In this case the disease had always been present and farmers understood that flax soon became an unprofitable crop, but this was explained by saying that it was "a hard crop on the soil." Had they known that the disease could have been held in check by treating the seed with formalin, they could have used that treatment to as good advantage in those days as at present.

The point that we wish to bring out is that, with all due respect for the man who has farmed for forty or fifty years, if he has not kept abreast of the scientific discoveries that have been made in agriculture in that time, his advice with reference to modern methods of farming is not safe to follow. We are no longer living in the nineteenth century. Agriculture, like all other pursuits, is making progress. A more intensified agriculture has brought with it new problems—more insect pests and more plant and animal diseases—to be solved.

That, in a way, is the price of intensified agriculture. But as necessity is the mother of invention, so science has come to our aid and shown us how to combat our new and more numerous enemies. Agriculture, thanks to a wise government, has advanced in scientific knowledge like all other pursuits, and it is up to us to make use of that knowledge and not harp about how things were done a half century ago.—Farmer and Stockman.

URGING FARMERS TO PUSH 1917 CROP PRODUCTION

Farm papers throughout the country are urging farmers to speed up their acreage and increase their production during the coming season in order to profit from the unusually high prices being paid for farm products.

The American Agriculturist says in part: "There is common sense and wisdom in putting in a generous acreage all along the line, looking towards 1917 harvest; use plant food with wise generosity; practice best cultural methods; utilize to the full farm machinery and labor-saving devices, even though at some additional initial cost; produce crops generously at conservative outlay of money and muscle with full confidence in the market

Mutual Creamery Company

Salt Lake City, Utah

PIONEER DEVELOPMENT

In many western states our time and money and pioneer work, with a cash market for the farmers' dairy and poultry products, have made it possible to reach the present splendid development, whereby western states have become exporters instead of importers.

WORLD WIDE MARKET

We reach local markets, also markets in any part of the United States and in all parts of the world, thus assuring the producer good returns and the benefit from a wide distribution of his products. The farmer produces and we reach those that consume and we bring in the dollars from over the mountains.

OUR PROFITS

Our profit is fixed by our Articles of Incorporation, namely: three per cent. on sales, if we can earn that much. Should we earn more than three per cent. on sales, this surplus earning is returned to our producer-stockholders, holding stock in the company at the rate of one share, par value Ten Dollars, for every two cows milked, in proportion to the amount of milk, cream, eggs and poultry they sell us. This limits our profits to approximately one cent per pound of butter, six-tenths of a cent per pound on cheese, and nine-tenths of a cent per dozen on eggs.

COMPETITION

This company does not own a share of stock in any corporation or firm, whether competitors or not, directly or indirectly engaged in the creamery or produce business in the West, in the United States, or in the world; and no firm, individual or corporation, whether competitors or not, directly or indirectly engaged in the creamery and produce business in the West, in the United States or in the world, owns any shares of stock or holds any interest whatsoever in this company.

STOCKHOLDERS

Two hundred and forty-three farmers have taken stock in our company, and sixty-six of our employees are stockholders. It is the right and privilege of every farmer, with milk and cream to sell, to become a stockholder with us; and sixty per cent. of our capital stock is reserved for producers.

DIVIDENDS PAID DURING 1916

The total dividends distributed to stockholders during the year 1916 were eight per cent. upon the par value of stock outstanding. We have in addition to these dividends paid to the farmers and producers above referred to two per cent. upon the total value of dairy and poultry products sold by them to this company.

MUTUAL CREAMERY COMPANY

W. F. Jensen, President.
Carlyle Hall, Manager.

BLACK LEG

LOSSES SURELY PREVENTED
by CUTTER'S BLACKLEG PILLS

Low-priced, fresh, reliable; preferred by western stockmen, because they protect where other vaccines fail.



Write for booklet and testimonials.
10-dose pkg. Blackleg Pills, \$1.00
50-dose pkg. Blackleg Pills, \$4.00

Use any injector, but Cutter's simplest and strongest. The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.

The Cutter Laboratory, Berkeley, California

If you want money, drop us a line.

We loan on first mortgages on Utah farms or Salt Lake City real estate at reasonable rates.

Prompt action and fair treatment if you do business with us.

Palmer Bond & Mortgage Co.

WALKER BANK BUILDING
SALT LAKE CITY

\$8,117,601.84

Deposits

This represents an increase of \$920,237.84 in five months and \$2,167,798 in one year.

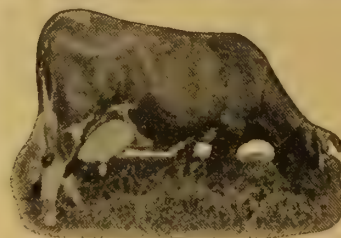
The growth is principally due to new accounts.

For the reason, ask our customers.



Walker Brothers Bankers

Founded 1859.
Oldest Intermountain Bank.
SALT LAKE CITY



THIS GRADE GUERNSEY COW

in Illinois produced in one month 93.9 lbs. of butter fat, equivalent to 109.5 lbs. butter—over 3½ lbs. daily—and 1566.1 lbs. milk testing 6% fat.

GUERNSEYS are the MOST ECONOMICAL PRODUCERS of BUTTER FAT

Write for a free breeder's calendar and our beautiful booklets
THE AMERICAN GUERNSEY CATTLE CLUB
BOX P U PETERBORO, N. H.

SPRING SEED WHEAT

Get your supply now while prices are reasonable. Choice re-cleaned stocks, any quantity from a pound to a carload. Send for free descriptive catalogue.

BAILEY & SONS CO.

SALT LAKE

outlook at reasonably profitable prices."

ESSENTIALS OF GROWING GOOD VEGETABLES

Nothing is more important in growing good vegetables than to have a fairly rich soil with which to work. The soil that does not need enrich-

ing to produce at its best is seldom found and success comes proportionately to the amount of fertilizers and manures that is applied when all other factors are given efficient attention. Make the soil rich, prepare the seed bed properly, use good seed, keep down the weeds and properly irrigate you will secure good vegetables during the coming season.

VALUE OF SUGAR BEETS

By Aaron F. Bracken, Assistant Agronomist, Utah Agricultural College. It is a well-known fact that any crop following beets shows a decided increase in yield when compared with the yield before beets were introduced into the rotation. The experience of practical farmers indicates that the increase varies from ten to one hundred per cent.

For best returns beets require deep fall plowing and constant cultivation during the growing period. Most of our western soils are rich in the elements used by plants, but stimulation of some kind is needed to bring this fertility into an available form. The cultivation which is demanded for the successful production of beets is a big factor in solving this problem.

The valuable part of the beet is the sugar which it contains. Of all of the mineral elements essential to plant growth not one exists in sugar. It is a direct product of carbon dioxide from the air and water from the soil. By leaving the beet tops in the field or by feeding them, as well as all the beet pulp possible, to stock—which is the most profitable method—and applying the resulting manure to the soil, the fertility of the soil can be quite permanently maintained. The only loss of fertility as a result of growing this crop under such a system of management occurs in the waste products at the sugar factory and in the amount which stock take for their growth.

The introduction of beets on a farm has another benefit—the control of weeds. Weeds steal plant foods and they shade or crowd out the young plants, but the most serious loss from weeds in the arid west is due to the water robbed from the growing crops. Dear experience has taught many that badly-infested farms lose much of their selling value on account of weeds. The worst weed yields to thorough cultivation. If the leaves of any plant are kept from developing, the plant will in time die—no matter how permanent its root system. The constant cultivation demanded by beets is very effective in such control.

Besides the value of beets in the farming system, they seem to have a moral effect upon the farmer. If they are grown at a profit, the soil and crop needs the best of care; in fact, the returns are in direct proportion to the intelligent effort put forth in their production. This new demand stimulates the reasoning powers of the farmer. He immediately wonders if all crops will yield to such careful treatment. By experience, he finds such to be true with the result that every crop introduced into the cropping system receives the same attention in proportion to its needs as does beets. Finally this pride in producing bigger yields and crops of better quality is broadened until it includes the whole farm. Inferior stock, including cattle, horses, hogs, and chickens, are gradually eliminated and their place is taken by animals of superior quality; old dilapidated sheds and stables—an eye-sore to any farm—are replaced by modern barns; and the appearance of the farmhouse is improved or a new one is built. In fact, the whole farm takes on a dignified appearance and every improvement is well paid for by increase in the valuation of the property.

Such an awakening cannot always be credited to the introduction of beets into the cropping system, but it

JOHN DEERE IMPLEMENTS

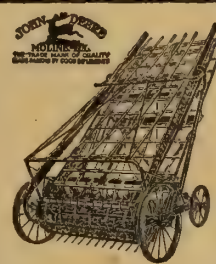
BETTER FARM IMPLEMENTS AND HOW TO USE THEM

John Deere Plows
For seventy-nine years the John Deere organization has specialized in making high-grade plows. John Deere Plows are noted the world over for their high quality material, workmanship and their ability to do the best kind of work.
The policy of turning out the best has paid the John Deere Company. The John Deere factory makes more steel plows than any other organization in the world.
The name "John Deere" on a plow is an assurance of highest quality material and satisfactory service. It means real plow value.



The John Deere General Purpose Plow is especially adapted for farmers who rotate their crops or practice diversified farming and have tame sod as well as stubble or old ground to plow. Moldboard has a long, slow turn which pulverizes the soil to best advantage. In sod, it does not break up the furrow slice but laps the furrow sufficiently to bury green vegetation in loose soil, preventing further growth and hastening decay. John Deere Plows are made in styles to meet all conditions, no matter what they are. Look for the name "John Deere" when you buy.

John Deere Hay Loaders
John Deere Hay Loaders are made in the factory where the "Great-Dain" line of hay tools originated.
The three styles of hay loaders made in this factory (the leading loaders on the market today) are:
The New Deere Loader, with the flexible floated gathering cylinder.
John Deere-Dain System Windrow Loader—a single cylinder loader.
John Deere-Dain Loader, the "one man" rake bar loader.
Investigate these loaders.



The John Deere-Dain System Windrow Loader is unusually suitable for hilly countries because light draft. Only one cylinder. Drum mounted on axle. No gears. Big capacity and good work—large expandable throat openings and slow speed of raking teeth—no beating, threshing or scraping of hay. Hay is placed in center of wagon. Handles tender hay gently without loss of leaves.

JOHN DEERE, MOLINE, ILLINOIS

is one of the most important factors which are responsible for such progression.


GROW SOME BEANS
Judging from the present outlook of prices beans will be a profitable crop. Farmers who have not grown them before should start on a small scale and try them out. Beans do well on most any soil where both corn and wheat are pro-

BOOK FREE 156 page reference book—tells all about a complete line of farm implements and how to adjust and use many of them. A practical encyclopedia of farm implements. Worth dollars.
Describes and illustrates Plows for Tractors; Walking and Riding Plows; Disc Plows; Cultivators; Spring Tooth and Spike Tooth Harrows; Disc Harrows; Alfalfa and Beet Tools; Farm and Mountain Wagons; Manure Spreaders; Inside Cup and Portable Grain Elevators; Corn Shellers; Hay Loaders; Stackers; Rakes; Mowers and Side Delivery Rakes; Hay Presses; Kaffir Headers; Grain Drills; Seeders; Grain and Corn Binders.

This book will be sent free to everyone stating what implements he is interested in and asking for Package No. X-160.


JOHN DEERE, MOLINE, ILL.

John Deere Harvesting Machinery
John Deere harvesting machines have worked under every possible condition—severe droughts that resulted in much light grain, short and irregular straw—extremely wet seasons, heavy grain, down and tangled.
However, the John Deere, "The Better Binder", has throughout maintained an unbroken record of success in cutting, binding and tying grain.



The John Deere Grain Binder has wide and high bull wheel—great power. Main frame riveted—unusually strong. Three packers instead of two, make better shaped bundles and save grain. Accurate tying mechanism. Quick turn tongue truck saves time, relieves horses and makes square corners and full swaths possible.

John Deere Factories
Every implement bearing the John Deere trade mark is made in a John Deere factory.
To insure the best in every class of implements there is a special John Deere factory for making each class. John Deere Plows are made in a plow factory; their haytools in a hay-tool factory; their planters in a planter factory.
Every tool in the John Deere line is made in a factory organized and equipped to make such tools.



All John Deere factories are in communication with each other. Each has the benefit and experience of all.
When it comes to purchasing raw material, John Deere factories as a unit, represent an enormous buying power. This is an advantage to purchasers of John Deere implements.
Don't forget that each John Deere factory is a leader in its field—that every implement it turns out is worthy of the name, "John Deere."

JOHN DEERE, MOLINE, ILLINOIS

rich soil, beans are a very profitable crop.

VOLUNTEER AID.
"James, there's a burglar downstairs. I'm going for help."
"Wait a minute. I'll go with you."
—Harper's Magazine.
"A god woman expects to get her reward in heaven, but a man usually wants his here on earth."

GROW SOME SMALL FRUITS

John Clark.

Years ago there seemed to be more small fruit grown in Utah than produced today. Is it the lack of a market surely it can not be the desire on the part of the people to use the small fruits.

The red currants, the native currants, so called, and other small fruits were used in large quantities years ago. They are easy to get a start.

Berry plants are the easiest of all plants to set out if there is any season in the ground. Berry plants should never be crowded very much; this is why so many people lose their berry patch in the hot summer season, they are set too thick. Berries when set in a patch should be set at least four feet in the drill and in rows not less than eight feet apart.

Clean cultivation is the thing for berries of all kinds. It is not the dead branches that kills out berries, but it is the living growth.

There is no other fruit that can be utilized in so many different ways as the blackberry.

The cost of living is soaring upward and with a great shortage of all feed and food supplies it behooves all classes to look to the all-important question of how to cut down the high cost of living. Money is more plentiful than ever before, but money is not a necessary of life. We can live entirely without money, but we can not live without food supplies. The entire world is looking to the farming class to cut the high cost of living, for business men know that without the farmer's help many of them would have to follow the plow.

There are many ways in which we can reduce the cost of living, but one of the most important steps is for the farmer to raise plenty of all kinds of fruit for family use and some to sell. Of course it takes several years for apples and peaches to come into bearing after they are set out, but we have other fruits that can not be excelled and that will bear a crop of fruit within 14 months. This fruit is the blackberry and dewberry. I can't understand why everybody that has a piece of land big enough to build a house and barn on don't set the fence rows out in blackberries and dewberries.

It seems that many people have a superstitious idea that blackberries will not grow except back in the old states where they grew when they were boys. Blackberries can be grown anywhere there is sandy soil; they are a crop that never fails. The old fence rows can be made into the most valuable land on the place when they are set out in blackberries.

THE HOG WALLOW

(Continued from page 3)

necessary. The wallow should be about 18 inches deep and located convenient to water supply so that it can easily be refilled as desired. Likewise, a drain outlet should be provided for emptying the pool when necessary.

If your name is to live at all, it is so much better to have it live in people's hearts than only in their brains. I don't know that one's eyes fill with tears when he thinks of the famous inventor of logarithms, but a song of Burns or a hymn of Charles Wesley goes right to the heart, and you can't help loving both of them—the sinner, as well as the saint.—Oliver Wendell Holmes.

20 YEARS IN WHICH TO PAY--

and the land will pay for itself as you go along - - -

Here—on the floor of Cache Valley—2½ miles west of Logan, with sugar beets and condensed milk factories near at hand—fine livestock markets only 3 hours away—lies one of the richest and most fertile tracts of farm land in all the west.

It is tile drained and possesses one of the finest water rights in the valley; your irrigating water will cost you from 11c to 12c an acre. A railroad runs through the heart of the tract, and you will have telephones, electric lights, schools, churches, rural delivery, fine flowing wells and a quick cash market for milk and farm products—at

Richland Acres

TILE DRAINED

"THE HEART OF CACHE VALLEY"

Here is beet land yielding from 15 to 20 tons of beets per acre.

LOW PRICES—EASY TERMS.

The price of farms at Richland Acres ranges from \$132 an acre up to \$202 per acre. You pay \$10 or \$20 down and then an annual payment per acre ranging from \$10 per year to \$16 per year.

At the time you make your cash payment per acre the company gives you a warranty in payment of the balance of the purchase deed to the property, taking a first mortgage price.

Take a pencil and let us show you how a 20-acre farm at Richland Acres will pay for itself and make you money—besides—each year.

We have one farm in mind in particular at Richland Acres. It contains 19.77 acres. You will make a cash payment of \$20 per acre, or \$395.40. Your annual payments on this farm will be \$13.25 per acre, or a total annual payment of \$261.95.

We want you to see Richland Acres! We want you to see with your own eyes the fine tile drainage system that has been installed, the splendid irrigating system, railroads, sugar-beet dumps, the condensed milk factories near by, the schools and colleges at Logan, the electric lights, telephones and all the other comforts and conveniences of this fertile tract.

There will never be another opportunity like Richland Acres.

Act immediately. Call upon—telephone—telegraph or write to our agents.

ED. D. SMITH & SONS
Exchange Place
Salt Lake City, Utah.

THE GARDON COMPANY
Logan, Utah.

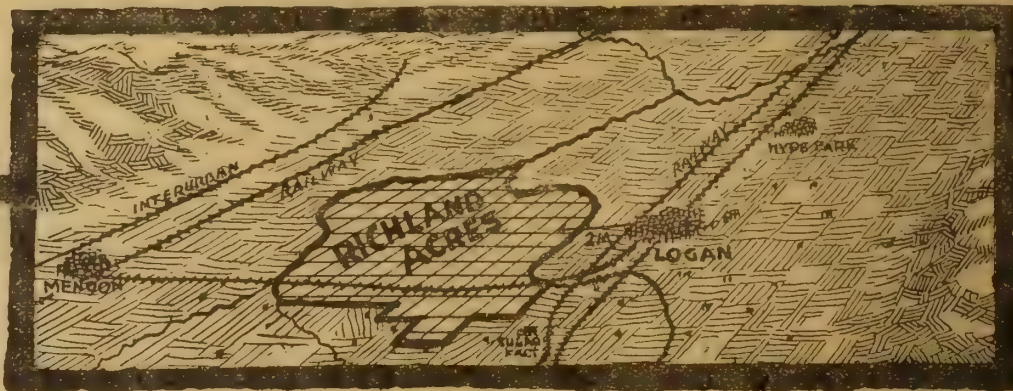
JAMES H. WALKER
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Provo, Utah.

REXBURG REAL ESTATE & LOAN COMPANY, Rexburg, Idaho.

LOGAN LAND & DRAINAGE COMPANY

A. F. CARDON, Gen. Mgr., Logan, Utah.



THE SEED POTATO SITUATION

At present, conditions are such that seed potatoes are commanding prices that are almost prohibitive and in many sections they can not be secured at all.

That only seed free from disease should be planted, is an excellent rule to follow if such seed can be obtained. If such seed can not be obtained the problem of how to select and treat diseased tubers in such a way that they may be used for planting must be considered.

In this work the following rules should be adhered to:—

1.—Discard all tubers showing signs of decay.

2.—Discard all tubers that show browning within the stem end if a sufficient amount of tubers free from this type of injury can be secured. If tubers having browning at the stem end must be used, discard the stem end and use the remainder of the tubers for seed.

3.—Discard tubers having deep scabs.

4.—Discard tubers having exceptionally large Rhizoctonia masses upon them.

5.—Treat all tubers whether they show signs of disease or not. Disease producing spores may be adhering to their surfaces. The following treatments may be used.

Corrosive Sublimate Treatment.

Soak seed tubers 1½ hours in a solution containing 4 oz. of corrosive sublimate in thirty gallons of water. When whole tubers are used discard solution after the fourth dipping. If tubers are cut before dipping, discard after second or third dipping. Do not use metal containers. Corrosive sublimate is very poisonous; if treated tubers are not planted they should be destroyed. This treatment is used for the control of Rhizoctonia and scab.

Formaldehyde Treatment.

Soak seed tubers one and one-half hours in a solution containing one pint of formaldehyde (formalin, 40 per cent strength) in thirty gallons of water. This treatment is efficient in the control of scab and is of limited value in the control of Rhizoctonia.

Note—If the treated tubers are not planted at once they should be placed where they can dry. As seed treatment kills the sprouts that have formed, some time may be saved by treating the tubers about two weeks or more before planting. This gives the tubers time to form new sprouts so that they come up more quickly when planted. If placed in the light (but not direct sun-light) the sprouts will be stronger than if kept in the dark. Treated potatoes should be kept away from all potatoes and sacks that have not been treated.

6—Plant in clean soil or soil that has not been used for potatoes for several years.

METHODS OF PLANTING CORN

The methods employed in planting corn are especially important in regions where either moisture or heat is sufficient.

Listed, or planting in furrows, is the most common and best method of planting corn in a large part of the semiarid area. It is not only economical, as it permits large acreages to be handled at the least cost, but it also places the plants to the best advantage to withstand drought. As the furrows are closed by cultivation, the plant roots are placed well below the surface. A deep soil mulch can be maintained without injury to the roots. The plants are more se-

curely braced to withstand winds than when surface planted.

In some semiarid sections early summer conditions are favorable for rapid growth. The plants make a tender, rapid growth and become larger than the later moisture supply will support. Listing retards this rapid early growth and is often a decided advantage on this account.

Where the seasons are very short, surface planting is better than listing, as the retarding of early growth leaves the plants insufficient time to reach maturity. Where surface planting is practiced on fairly level land it is usually advisable to plant in checks to permit cross cultivation. Cross cultivation makes weed and grass control easier. It also assists cultivation, drying and warming a larger part of the soil surface.

A thin stand of plants is an essential feature of successful corn growing in regions of limited moisture supply. When planting is done with a lister in rows 3 to 3½ feet apart, the plants should be one in a place and from 18 to 36 inches apart, depending upon the rainfall and the fertility and the water-holding capacity of the soil. In surface-planted corn with the hills 3½ feet apart each way, the stand should not be thicker than two plants per hill. Even with the best of seed more kernels should be planted than the number of plants desired. Some young plants, mostly the weaker ones, will perish.

The usual distance between corn rows is about 3½ feet, which is a convenient distance for cultivating. With the rows at this distance the roots meet between the rows and occupy all of the upper soil before the corn comes into tassel.

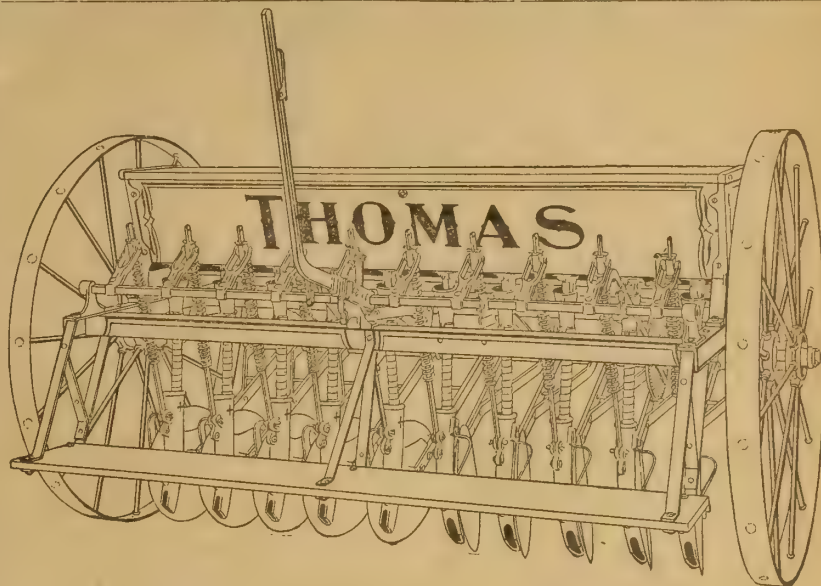
In certain droughty sections, where the seasons are comparatively long, increasing the width of row to 7 feet and doubling the stand in the row has been found to be an advantage. On account of being close together within the rows the young plants compete

for the near-by moisture and are prevented from making too rapid and too tender a growth. The roots do not meet between the rows until the plants have about reached their full growth, and the moisture in the soil between the wide rows benefits the plants at the time they are forming ears. Where the summers are long other crops, or another crop of corn, can be planted later in the season between the 7-foot rows if the seasonal rainfall proves sufficient.

The success of the crop depends upon having the corn reach the ear-forming period when moisture and heat

are available at the same time. The chances are increased by making a very early and a late planting of an early-maturing variety. Using seed of an early-maturing variety in one planter box and seed of a late-maturing variety in the other box increases the chances of having some plants reach the ear-forming period when moisture and heat are available at the same time.

Corn should not be covered with more than 1½ or 2 inches of soil except when the surface is dry and it is necessary to plant deeper to reach moist soil. In cold, heavy soils 1 inch is sufficient.



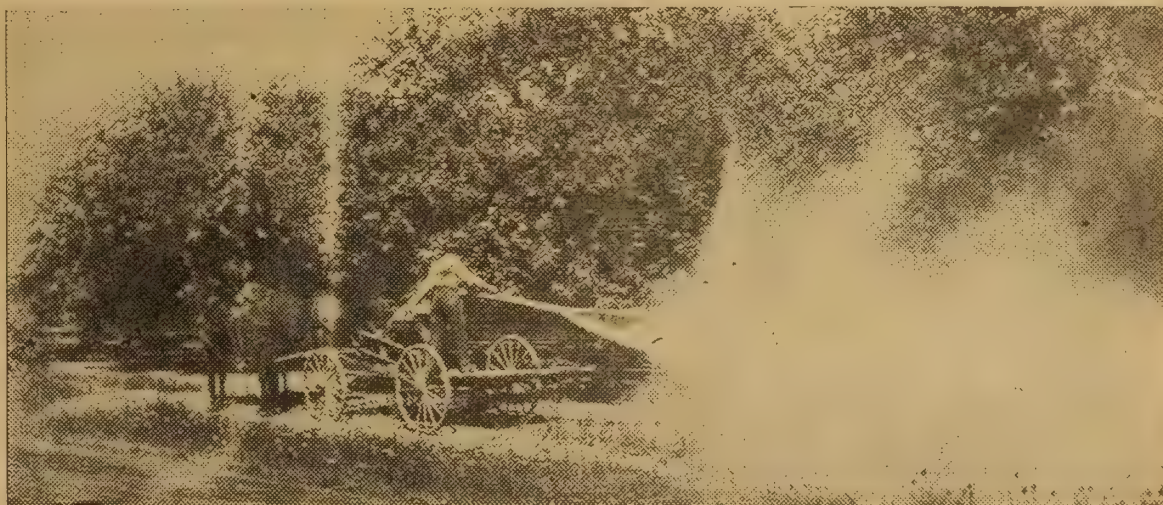
The Thomas Grain Drill for Bigger Crops.

Produces from two to five bushels more wheat per acre than any other grain drill.

Ask your Dealer or write to the

Utah Implement-Vehicle Co.

SALT LAKE CITY



The Niagara Dusting Machine at work in an orchard.

This machine can also be used in the alfalfa field for the rapid application of arsenate powder for weevil, and with tobacco dust for aphids. The Niagara Way is the quickest way of applying insecticides and fungicides in orchard and field. Write for the free book on dusting.

Niagara Sprayer Co.,

Middleport, N. Y.

F. A. Frazier, Pacific manager,

P. O. Box 372, Portland, Oregon.

POTATOES

9 $\frac{1}{2}$ Bushels From One Pound of Seed

Three potatoes, planted in 56 hills in Huron Co., Ohio, yielded this amount. The seed, the planting, and the crop harvested are matters of County record. You can do as well or even better by following my instructions. It is not a matter of variety of seed, or soil, or fertilizer seed; important as each of these matters is, but it is the selection and cutting of seed and treatment. It was these elements that enabled me to produce the yield of 552 pounds of potatoes from one pound of seed. Full information as to how it was done, the seed used the soil, the fertilizer employed, the tillage and the methods of producing this large crop will be sent for One Dollar. Send your order now and grow more potatoes from less seed. Any one who feels too poor to spend a dollar to learn how to increase the yield in raising potatoes send me your name and address. Planting time is near. Send your order today and raise more potatoes from less seed.

A. R. GIBSON
Brookfield, Ill.

Summer Knit Goods

The stocks are good now.

Order them direct from the manufacturer and save money.

Underwear, Hosiery, Light-weight Sweaters, Bathing Suits, etc.

We specialize in approved L. D. S. Garments.

Watch S. L. Dailies During Conference for Sale notices.

SALT LAKE WOOLEN MILLS

50-52-54 Post Office Place
SALT LAKE CITY, UTAH.

Help Your Boy

It is every father's business to advise and help his boy.

To guide and start him out right in life.

Can you help him in any greater way than to find the work for which he is best fitted?

To do so means his success.

Get one of Dr. F. S. Harris' new books.

The Young Man and His Vocation

It explains the various sides of every kind of work—tells the preparation for each, the opportunities of each and the pay from each.

It points out, suggests, encourages.

It will help you help your boy. It will help your boy choose for himself.

Send \$1.25 to

Book Department

THE UTAH FARMER

LEHI

UTAH

THE HARROW

I. D. O'Donnell.


If the maxim, "Old age is honorable," holds good with farm implements as well as with men, then the harrow is by right honorable indeed. Centuries ago the worth of the harrow as a help in preparing land for seeding was recognized, even though the harrow of antiquity was nothing more than a thorny brush which was dragged many times over the broken ground. Changes affecting the harrow have been in the form of the harrow only; the theories of its use have remained the same. One of the early improvements in the harrow was that of fastening two small trees or brushes together by a crosspiece at their butts and in this crosspiece were placed wooden pegs which stirred the soil as the harrow was dragged across the field. Following this there was the wooden frame with wooden pegs, made in much the same shape as the modern single-section harrow—though, of course, much more cumbersome. Then the wooden pegs were replaced by iron pegs which stood the wear better, and later the form of the harrow was changed to resemble the letter A, and this A harrow was used for many generations and well into the memory of many of us of today. As our lands were brought under cultivation the demand for a harrow which would permit covering more ground per day resulted in the sectional harrow—made first with wooden frame and steel teeth and later with steel frame and teeth and equipped with levers by which the slant of the teeth and their penetration could be regulated.

Like all farm implements, the harrow has its uses and abuses. If harrowing is done at the right time and with the proper soil conditions the results are highly profitable, but harrowing at the wrong time or with improper soil conditions would better be left undone. When the soil is just right for harrowing every effort should be made to hurry the work. The great amount of ground which may be covered by the modern harrow suits it well to what is expected of it. If ground is harrowed when too wet the same damage as plowing wet ground results. The soil is in part "puddled" and its condition to help plant growth destroyed. Likewise, there is a condition of dryness of the soil when it is lost labor to harrow. Working up a very fine, dusty, and drifting top soil is not an aid to moisture retention, but aids the drying out of the soil. If soil is plowed in right condition, following the plow as quickly as possible by the harrow is very beneficial. Also the use of this implement following rains to break up crust formation and maintain the soil mulch gives good results. A light harrowing at the time such crops as corn, potatoes, beets, grain, etc., are coming through the soil surface serves the double purpose of aiding an even crop stand and destroying weeds that are at the proper stage of growth for destruction by the harrow. The harrowing of such crops, however, should not be done very early of mornings or at times when the plants are crisp and easily broken by harrow teeth. On the other hand, when harrowing plowed ground to kill young weed growth, try to pick out days that are cloudy or utilize the early mornings, as the weeds will be more effectively damaged.

The theory of the use of the harrow is to stir rather than turn the

Interlocking

CEMENT STAVE Silos



Davis County,
Bonneville Dairy,
Woods Cross,
Utah, 12 x 33 ft.
Silo 85 ton capacity.

Intermountain
Concrete Co.
OGDEN-UTAH
Please Send Me Catalogue No. 3
NAME
ADDRESS

Wm. F. Hoggan,
owner of the silo
shown above will
be glad to answer
your questions.

L. D. S. Spring Conference

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SALT LAKE CITY

APRIL 4th to 8th Inc., 1917

Low Excursion Rates
via
Salt Lake Route



Tickets on Sale at All
Utah Stations as Follows:

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Silver City, and points
East, April 3rd to 8th in-
clusive. Good returning
until April 12th.

All other points, on sale
April 2nd to 7th inclusive.
Good returning until April
15th.

Extra Accommodations Will be Provided.

See your agent for tickets and further particulars.
Wm. Warner, A. G. P. A., Salt Lake City, Utah.

soil. This stirring is particularly beneficial in that it introduces air in- to the soil, thereby warming it and encouraging the action of the ph

Big Money
Let us start you in a business that will make you from \$15 to \$50 a day when farm work is slack. Other men have done it for years with an **Improved Powers Combined Well Boring and Drilling Machine**. Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed. Small investment; easy terms. Make machine pay for itself in a few weeks work. There is a big demand for wells to water stock and for irrigation. Write for free illustrated circular showing different styles. **Lisle Manufacturing Co.** Box 978 Clarinda, Iowa

Bush Car Delivered Free
In a Bush Car. Pay for it out of your commissions on sales, my agents are making money. Shipments are prompt. Bush Cars guaranteed or money back. Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 311N 114 in Wheelbase Delco Ignition—Elect. Stg. & Ltg. **BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois**

ATLAS REDWOOD TANKS

"The Tank that Lasts a Lifetime"
FULL STOCK OF STORAGE AND STOCK WATERING TANKS CARRIED IN STOCK BY GREEN MACHINERY & MANUFACTURING CO.
Machinery Merchants & Manufacturers
American Building, 338 South Main St.
SALT LAKE CITY, UTAH

Buy This Sugar

If you are not already using Extra Fine Table and Preserving Sugar, order a bag from your grocer and learn for yourself that—

EXTRA FINE Table and Preserving Sugar
ABSOLUTELY PURE

Made by the Utah-Idaho Sugar Company is the "standard of sugar perfection." This sugar is a great deal different from other sugars in appearance; but do have the assurance that it is pure and good.

Put up in 10, 25, 50 and 100 pound bags. Special 48-pound bag for parcel post orders.

Made by
UTAH-IDAHO SUGAR COMPANY

promoting agents in the soil. Meadows, pastures, and hay fields become "hidebound," a condition which is relieved by timely use of the harrow, preferably in the spring just when the growth is starting. Of course, special implements for this work are manufactured, but in the absence of such special implements, you can get results from the peg-tooth harrow, the spring-tooth harrow, or the disk.

The harrow as now constructed is so arranged that if properly nitched the teeth will not follow each other or "track." If the teeth do "track" change the hitch, as you are not really harrowing unless each tooth stirs its own particular strip of soil.

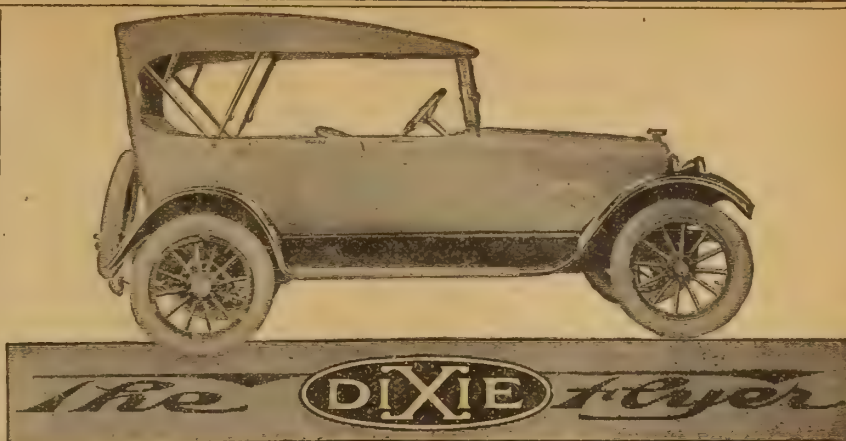
Do not be discouraged if your field looks worse after harrowing than it did before the work. The harrow has a way of dragging clods to the surface and of letting the fine soil down to the seed bed proper where it is needed. A clod on top of the ground is far less dangerous than one a few inches under the surface.

The great advantage of the harrow lies in the simplicity of its construction and use. If you can not afford to buy a modern steel harrow you can follow the example of your forefathers and make an A harrow which will do good work and last for years.

IRRIGATORS' QUERIES ANSWERED
O. W. Iseralson, U. A. C.

In the last issue of the Farmer, you suggested the desirability of some State authority determining the maximum quantity of water which should be applied to high-lying lands in one irrigation. This, however, seems to me to be entirely impracticable since I am positive that many of these lands have court decrees to quantities of water which are much larger than what you mention; consequently, even if a law were passed to regulate the total depth of application, it could not be enforced.

This brings up a very important question, which probably cannot be well discussed in detail at this time. However, a few general statements may be made. Along with the irrigation development in the West, there has grown up a doctrine controlling water rights, which is termed the Doctrine of Prior Appropriation. This doctrine declares that the man who is "first in time is first in right," provided, however, that the right continues only with a continuation of use of water for a beneficial purpose. If, therefore, at the present time, conditions are so different to what they were at the time the decree referred to was issued, it seems reasonable to believe that it is entirely within the power of the State to change the so-called early court decrees. In other words, according to the doctrine of prior appropriation based upon beneficial use there can exist no rights to excessive amounts of water since the application of excessive quantities of water is not a beneficial use, but is rather a detrimental use. It is undoubtedly necessary that court decrees to water rights be reviewed and if necessary modified, every forty or fifty years; since the physical conditions under which irrigation water is used, change so much that it does not seem logical to think that one decree should be made perpetual. Rights to the use of water should, rather, be adjusted according to the physical needs of the land as the years pass, and it is believed that the courts are beginning to recognize this fact to a considerable extent.



IT'S the difference in performance which will decide you in the selection of your car.

To the Dixie Flyer we have brought those admirable qualities in performance which have won for the Kentucky Thoroughbred the admiration, respect and homage of all:

- Off at full speed,
- Able and sure to go the distance *quick*,
- Staunch and sound in every quarter,
- Easy riding.

Recognizing, too, that the luxury of this season is the essential of next, we have ever looked forward, always giving the most for the least.

When you say, "The convenience I want in my car is—" you will find it already in the Dixie Flyer, and you will find more usable service-value than in any other car of its price class.

See the Dixie Flyer dealer in your town for a demonstration. Write for handsome catalogue, just off the press.

DIXIE MOTOR CAR COMPANY LOUISVILLE, KY.

Distributors:

Miller-Cahoon Co.

Murray, Utah, Salt Lake City, Utah, Idaho Falls, Idaho.

V. G. PURINTON
263 Broadway
Denver, Colorado.

Touring Car \$845
Roadster \$845
Sedan \$1275
(At the Factory)

At the Factory
\$845

THE Martin DITCHER
—Make the NEW and clean the OLD with the MARTIN Ditcher, Dyker and Grader. It makes or cleans irrigation or drain ditches up to 4 feet deep, any width. Builds dykes; grades roads.
THE Martin Ditcher and Grader
is guaranteed to do more and better work than 50 men with shovels. Works in sand, clay, gumbo or rocks—wet or dry; on side hill or on level ground. Made in 2, 4 and 6-horse sizes.
All Steel—Reversible
Adjustable for wide or narrow cut. Nowheels, levers or breakable parts. Cost low. Up-keep nothing.
OWENSBORO DITCHER & GRADER CO., Inc.
803 Evans Block
Denver - - Colorado

ONE OF A THOUSAND
"I never was a great friend of the shovel and since I have used the MARTIN, the shovel and I have entirely dissolved partnership." F. H. Lytle, Pioche, Nev.

10 DAYS
trial to everybody. Write today for catalog, with full particulars and introductory offer on new 1917 Models.

Utah Implement-Vehicle Co.

Salt Lake Agents and Distributors.

Write us.

For the invalid
as well as
those in
perfect
health



Baker's

Cocoa

is an ideal
food
beverage,

pure,
delicious
and
wholesome.



Walter Baker & Co. Ltd.
ESTABLISHED 1780 DORCHESTER, MASS

SEEDS

Purity Brand

BEST BY TEST

Send Today For Our Big
FREE Catalog.

Vogeler Seed Co.

Salt Lake City, Utah.

Keep The Feet Dry

It will keep the health good
Provide protection for your
self and family against sickness
by having the shoes fixed now.

Our nearest shop will give you
the same excellent service that
has ever been our watchword.

Send your shoes—TODAY to
our nearest shop.

Royal Shoe Repairing Co.

Salt Lake, Ogden, Logan, Spanish
Fork, Richfield and Provo.

Mention U. F. when you send them.

HATCH THE CHICKENS NOW

(Continued from page 3)

eggs in the fall and winter, while a
larger proportion of hens will get
broody early in the spring, thus com-
pleting the necessary circle for early
fall egg production.

Early hatched chickens are by far
the most profitable in every way.

THE INCUBATOR MUST BE PROPERLY ADJUSTED

The incubator is being very suc-
cessfully used by many people today.
There are many failures in hatching
that might be avoided. Every in-
cubator sent out has instructions with
it but how near are they followed. It
is only fair to the company and the
machines that they are closely and
carefully followed.

See that the thermometer is regis-
tering correctly and, also, that it is
the proper distance from the eggs.
If the directions say level with the
top of the eggs it does not mean two
inches or even one half inch above,
but exactly level. The incubator
should be thoroughly cleaned and dis-
infected before every hatch. Ven-
tilation should be largely restricted
the first week and then increased to
full capacity at the close. The amount
of ventilation varies with the temper-
ature of the room. Cooling the eggs
every day after the third day
strengthens the germ, but cooling does
not mean chilling. Eggs should be
cooled slowly. Above all, eggs should
never be turned after the lamp has
been cared for. The oil on the hands
will close up the pores in the shell
and suffocate the chick.

There is great difference between
incubators. Different makes require
different treatment. All incubators
must be adapted to the particular en-
vironment while many possess greater
range of adaptability than others. The
cheaper machines usually lack this
feature, and while they may produce
satisfactory results under one set of
conditions, they may be an absolute
failure under others. If a machine is
producing unsatisfactory results, per-
haps a slight change will remedy the
fault and eliminate the trouble.

Successful results should not be ex-
pected if the breeding stock has not
been properly mated. Birds of poor
vitality produce chicks similar in
nature, and many of the chicks that
die in the shell are not the fault of
the incubator but of poor stock im-
properly cared for. Birds of low vitality
are also more apt to transmit the

Using Sugar

When housewives use
sugar that is made in the
west, such as Table and
Preserving Sugar, they
are securing a product that
is not only 100 per cent
pure but which also con-
tains 98 per cent of energy
when consumed as food—
a body builder, a strength
builder and an energy
builder.

YOU NEED THIS FOOD

High Prices Will Continue

during next year.

It will be to your interest
to produce the biggest crops
possible, both in field and
garden. Our catalogue tells
all about Vogeler's Purity
Seeds.

SEND FOR A FREE COPY

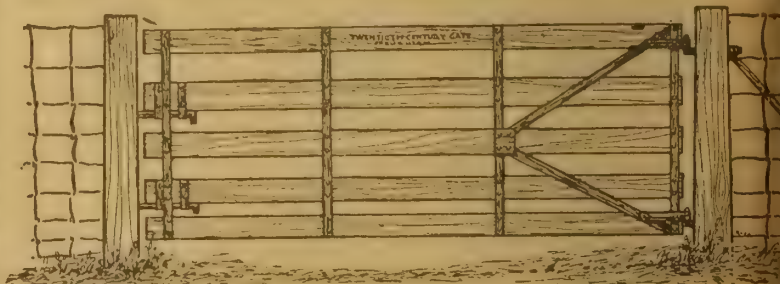
Vogeler Seed Co.

SALT LAKE CITY, UTAH

The Twentieth Century Gate

Have you investigated this marvel of gate construction? Every
land owner owes this much to himself before purchasing a gate.

Over 3,000 satisfied buyers in Utah and Idaho.



This Gate Will Mean Longer, Better
Service at a Lower Price

30 DAYS FREE TRIAL

OUR LOW PRICES

Give this Gate a trial for 30
days and if you are not satisfied
with it in every way, return it to
us and we will refund your
money. This is a good way to
test it out. You will be under
no obligation to keep it, if it does
n't suit you.

12 ft. gate. \$7.75. 14 ft. gate \$7.99
Ready to Hang.

We will send you chann-
steels, bolts, hinges, and lathe
knocked down for one gate
\$5.00; or we will send you to
sets for \$9.00, when accompan-
by this coupon for \$1.00.

**Twentieth Century
Gate Co.**

Provo City

Utah

\$1 COUPON

This coupon is good for \$1.00
when accompanied with the
balance of the purchase price
of one Twentieth Century
Gate.

the diarrhea germ to the little chick, chicks of low vitality do not possess great resisting power toward disease.

Incubation is the problem confronting most people who raise poultry at present, and perhaps some are contemplating changing their system of hatching. Some have been attracted by the lure of the incubator and many have been disgusted with last year's results. It is generally conceded that artificial incubation produces stronger chicks than artificial, but the whims of the hen and attention necessary to care make more people turn to natural methods and as a result at numbers of incubator chickens produced each year. In Egypt it is said that the hen is losing some of her maternal instincts because of not being permitted to set. Artificial incubation has come to be recognized as an economic necessity. Many farmers have adopted the combination of

high class thoroughbred White South Rock Baby Chicks and Hatching Eggs. Heavy laying strains. \$15c, eggs \$2.00 and \$3.00 per egg of 15.

QUALITY FARM
121 E. Albamba, Rd.
California.

FOR SALE
BLACK MINORCA AND
BUFF ORPINGTON EGGS.
UTILITY STRAINS
\$1.00 for 15; \$5.00 for 100.
MRS. P. MAHER
Ninth St. Ogden, Utah

FOR SALE
Cream Separator, almost new, in use one month. Cost \$75.00, sell for \$40.00 cash. Has 600 lbs capacity per hour.
L. D. LOVE
Idaho

For Sale

Acres excellent dry land, located at north end of Cedar Valley. Main joins land on west. Good drainage, Cedar Fort Creek runs through center. 170 acres Turkey wheat planted, 100 acres stubbles. Make price right and terms easy. Sell part or all. Enquire

A. E. HAWKINS
Cedar Valley, Utah.

hatching with incubators and brooding with hens while others abandon entirely the use of the hens as either hatchers or brooders.

CROPS FOR HIGH ALTITUDE (Continued from page 3)

length of season.

5. Utah winter barley is the best variety available for fall planting.

The varieties of crops mentioned, while good, may not be able to compete with other varieties that will doubtless be developed for short seasons.

"The most terrible death in the world is that caused by the disease called 'Dry Rot,' where men die standing up and continue to walk around."

IRRIGATION AND DRAINAGE CONGRESS

There will be a meeting of interest to all those who have to do with drainage or irrigation in Salt Lake City, April 4th, 1917. The meetings will be held at Hotel Utah, Wednesday morning, April 4th at 10:00 A. M. At this meeting Mr. Mathoniah Thomas will discuss "Recent Irrigation Legislation. The proposed Constitution and by-laws will be considered and some action taken.

In the evening meeting to be held at 8 P. M. the first speaker will be W. D. Beers who will discuss "Some Phases of Canal Management. Mr. C. F. Brown will give a talk on "Drainage of Irrigated Land"—Preventative Measures—Reclamation Features. The public is invited and a special invitation is given to all those interested in these important subjects Irrigation and Drainage.

FAT STOCK SHOW

There is considerable interest being shown in the Fat Stock Show to be held in Salt Lake City, April 4th, 5th and 6th. Prizes are being offered for individual and car load lots of cattle, swine and sheep.

All entries must be in the hands of Mr. E. C. Parsons, Cullen Hotel, Salt Lake City, by April 1st, and all the stock to be exhibited must be on the grounds not later than April 2nd.

EAR PERFECT
TAGS
Samples Free
ATTACHED INSTANTANEOUSLY
Name and Address. Numbered if Desired.
LEG BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

There are no entry fees. The object is to create an interest in the production of fat stock.

We need a local market for our

live-stock and this show is to interest our stock men in the new stock yard and packing plant at North Salt Lake.

Don't Waste the "Golden Nuggets"!

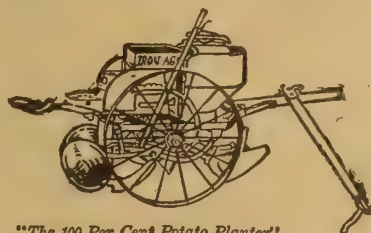
Make every seed-piece count, yet make sure of a full stand. This boy will help you do 100% potato planting, with no doubles and no misses. He will save you 1 to 2 bushels per acre—some say a barrel. He earns his way many times over. You can't afford to do without him. Use the seed-saving



IRON AGE Potato Planter

It plants as fast as the team can walk, spaces the seed evenly and at uniform depth. Has no pickers—nothing to cut or bruise the seed. Spreads the fertilizer and thoroughly mixes it with the soil so that it can not injure the seed. Can be had in two styles with or without fertilizer attachments and with choice of furrow openers.

Write today for booklet fully describing this 100% Potato Planter. We also make a full line of potato spraying, cultivating and garden tools.

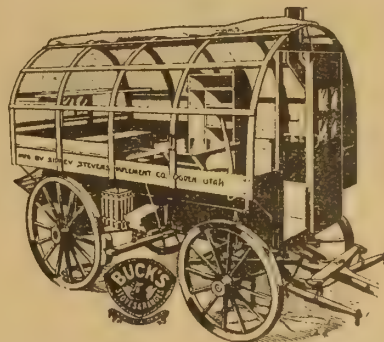


"The 100 Per Cent Potato Planter"

Bateman Mfg. Co., Box
835, Grenloch, N. J.

Sold by
UTAH IMPLEMENT-VEHICLE CO.,
Salt Lake City, Utah.

The "Home Comfort Camp"



This Camp is recognized throughout the wool growing sections of the west as a camp in a class of its own.

Adapted for sheep and stock herding, pleasure camping, dry farm camp and other similar purposes.

Write for prices and illustrated circular describing the many special features.

KEPT MADE UP FOR PROMPT SHIPMENT

MANUFACTURED BY

Sidney Stevens Implement Co.

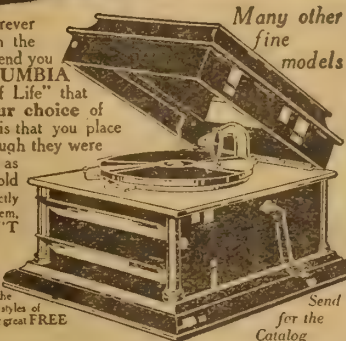
OGDEN, UTAH.

Branches: Logan, Utah; Preston and Montpelier, Idaho.

FREE This Wonderful GRAFONOLA YOURS FOR 5 DAYS FREE

Wherever you live in the Western States we'll send you this world famous COLUMBIA GRAFONOLA with the true "Tone of Life" that simply CAN'T BE IMITATED, and your choice of records from a list of thousands. All we ask is that you place them in your home and use them exactly as though they were your own, for 5 days. Play them—enjoy them as much as you like—invite the neighbors—hold dances and happy parties. Then if you aren't perfectly delighted—if you aren't entirely sure you want to keep them, return them AT OUR EXPENSE and the trial WON'T COST YOU A COPPER CENT. EASIEST TERMS if you do keep them.

FREE BOOK Write today, a postal will do, and get FREE 424-page book giving names of thousands of records and showing pictures and histories of the world's greatest singers and musicians. Also beautiful picture of all styles of GRAFONOLAS, showing them in colors, and full particulars of our great FREE OFFER. Write today. No obligation on writing.



DAYNES-BEEBE MUSIC CO., Dept. 6135, Salt Lake City, Utah

THE WEST'S BIG MUSIC HOUSE—"Older than the State of Utah"

COMPARE YOUR PROFITS

This is the day when farmers are making a very careful study as to the profit they are making. It is not so much a question of how much does it cost to produce a certain crop but what is the profit after all expenses are paid. How many farmers really know the cost of producing any certain crop. Do you keep a careful account so that you can tell the profit.

Here are some figures submitted by John P. Holmgren a very successful farmer of Bear River Valley, the man who won the prize when he raised 39 tons per acre of sugar beets.

Cost of growing oats per acre:

Plowing	\$ 2.50
Harrowing	.50
Floating	.50
Drilling	.50
Seed Grain	1.75
Irrigating	2.50
Water rental	1.00
Harvesting	1.00
Twine	.75
Stacking	1.50
Threshing 60 bushels, 4c.	2.40
To market	.76
Fertilizer	10.00

\$25.65

Straw

5.65

Figure the estimate yield of 60 bushel per acre.

60 bu. (1,920 lbs.)

at \$1.25 cwt. \$33.60

Expense 20.00

\$13.60 Profit

An 80 bushel crop increases your cost \$1.30 and your 20 bushels additional is worth \$11.20

Or an additional gain of 9.90

Added to 13.60

Profit \$23.50

Cost of sugar beets per acre:

Plowing 1 acre	\$ 2.50
Harrowing 2 times at 25c	.50
Floating	.50
Harrowing again	.25
Seeding	2.75
Thinning and 2 hoeings	11.00
Water rental	1.00
Irrigating 4 times	5.00
Cultivating 5 times	2.00
Plowing up beets	2.50
Topping 15 tons crop at 70c	10.50
Hauling 15 ton crop at 60c	9.00
Fertilizer 10 ton Manure	10.00

\$57.50

Beet Leaves, pasture 2.00

Figure the yield at 15 tons per acre.

15 ton at \$7 \$105.00

Expense 55.50

\$49.50 Profit

A 20 ton crop of beets increases your cost \$6.50 and your 5 tons additional is worth \$35.00

Or an additional gain of 28.50

Added to \$49.50

Profit \$78.00

Cost of growing wheat per acre:

Plowing	\$ 2.50
Harrowing	.50
Floating	.50
Drilling	.50
Seed Grain	1.25
Irrigating	2.50
Water rental	1.00
Harvesting	1.00
Twine	.75
Stacking	1.50
Threshing 30 bushels	2.10
To market 2 1/2c	.15
Fertilizer	10.00

\$24.85

Straw 4.85

\$20.00

Figure the yield at 30 busnel per acre.

30 bu. at \$1.25 \$37.50

Expense 20.00

\$17.50 Profit

A 40 bushel crop increases your cost \$2.15 and your 10 bushels additional is worth \$12.50

Or an additional gain of 10.35

Added to 17.50

Profit \$27.85

In order to reach a goal, one must traverse the distance between himself and that goal. There is no short cut.

Economy begins with saving money. It is among the first and highest virtues—Lincoln.

DUNHAM

CULTI-PACKER

TRADE MARK REG.

10 Jobs for a Culti-Packer

Mulches Surface

The front wheels make ridges and the back wheels split these ridges and stir them over and over

Firms Loose Soil

Wheels cut through top soil firming out air spaces in soil below. Moisture stays better in firm soil.

Crushes Lumps

Curved wheels crush the hardest lumps. Back wheels come half way between front wheels --no lumps missed.

Saves Moisture

Packs new furrows and stirs top soil to prevent evaporation.

Stops Winter Killing

In early spring it settles down the heaved soil, resets the plant and fills up frost cracks.

Cultivates Crops

Firms soil about roots, stirs surface, breaks crusts. Wheels detachable for straddling corn.

Starts Seed

Firms soil around seeds to attract moisture and make them sprout quickly.

Retards Blowing

Ridges at right angles to prevailing winds retard wind from blowing the soil.

Hinders Weeds

In newly seeded fields will set back little weeds, giving crops a good start.

Levels Soil

Tears down high spots, builds up low places, making field smooth for harvest

"SOIL SENSE" FREE BOOK

48 pages of fine soil photos and information on Root Growth, Seed Beds, Soil Moisture, Crop Cultivation, and special hints on many different crops.

Ask your dealer or write us direct.



More Than A Clod Buster

The Culti-Packer with its two rows of heavy semi-steel wheels crushes the worst lumps into a fine mellow seed bed, but that is only one of ten farm jobs that it will do equally well.

The farmer who uses it right will have it in the field from early spring till late in fall for one purpose or another. He will use it on every crop he grows--for preparing the seed bed, starting the seed, cultivating the growing crop, breaking crusts, saving moisture.

Read this list of Culti-Packer jobs and see what noted farm authorities have to say about it--then go to your dealer and get acquainted with this tool.

Be Sure It's A Culti-Packer

The genuine Culti-Packer has the three features listed below:

Consolidated Wagon & Machine Company.

Distributors

Utah Idaho Wyoming Nevada

The Dunham Co.

309-337 First Avenue
Berea, Ohio

Expert Opinion

Alfalfa

"On ordinary well plowed ground, the plow, spring tooth harrow and Culti-Packer are all that are needed to prepare a perfect seed bed. The Culti-Packer greatly excels any other implement we have ever used for this purpose."

Chas. B. Wing, Alfalfa Expert

Corn

"Every one about the farm is extremely enthusiastic over the use of this tool. We used it on corn ground after the corn has been planted. It seemed almost an ideal tool for this purpose."

Ohio State University

Wheat

"Rolling in the spring will compact the soil about the plant root and add vigorous growth wheat. Since the Culti-Packer has come on the market we have come to favor it. During a period of four years, rolling gave an average increase of 5 bushels per acre."

Nebraska College of Agriculture

Oats

"Compacting is usually done with a smoothing harrow. A much better tool is the Culti-Packer. It can be used instead of the harrow after disking and seedling."

Frank I. M.

General Crops

"We are using the Culti-Packer on the experiment field here. It is certainly one of the greatest tools I have ever used on a farm."

Kentucky Experiment Station

"We have used one of the Culti-Packers with good satisfaction. In fact for certain conditions of soil it is one of the best machines for preparing a seed bed we have ever come across."

N.Y. State College of Agriculture

1 Quick Detachable Wheels can be removed from axle in one minute, leaving a gap for straddling corn rows.

2 Wheels Always Ridges; an arm keeps the wheels of back gang in position to split ridges left by front gang.

3 Dunham Roller Bearings The axle turns in steel roller bearings making the Culti-Packer pull easily with the two horse team.



Don't Blame The Cows

If you are not getting sufficient milk of the right richness and quality to make your cows pay, who's fault is it? Don't blame the cow, look to the feed. You will get almost immediate returns from—



Stock Feed

This well-balanced highly nutritious stock feed is one of the most economical feeds you can buy when you figure re-

rite for booklet "Feeding Results, and get a trial from your dealer.



Utah Cereal Food Co.
Ogden, Utah

HOME

CHEESE AND CANDY RICH IN FOOD VALUE

"Should we eat so much candy and rich foods?" is a question that is often asked, and the members of the food chemistry classes of the University of Omaha have looked up the answer and have found other relative information. They do not condemn the use of good candy, but instead endorse it.

It is a fact, the class found, that well prepared chocolate and creams offer as good a balanced diet as could be wished. The richness of cocoa, which contains a very high percentage of fats and protein, is balanced by the sugar which is mostly carbohydrates.

People often wonder how children can eat so much candy and not get sick. The reason for this is very simple. As the child grows and plays a great deal of energy is being consumed continually.

Candy Supplies Energy.

Candy can supply this energy instantly, as it is a well known fact that the human stomach assimilates sugars very readily. We also wonder why we lose our appetite if we eat a considerable amount of sweets. As has been said before, the candy is very rich and can supply the required calorific value quickly and by the use of small quantities. Therefore, when we eat candy the eating crave is satisfied and we no longer feel hungry.

Another question asked is, "Why do people eat more fats and candy in winter than they do in warm weather." The answer to this is found in the fact that the body has to supply more heat if cold weather than it does when it is warm. If more heat is necessary, more energy is used up and consequently more fuel must be consumed. Another fact is that fats can furnish heat almost immediately after being taken into the body.

Captain Cook's Gumdrops.

Here it was pointed out that Cook fed the Esquimos on gumdrops and that the natives went wild over them.

The class condemned compressed foods. They declared that nature so combines and prepares food as to make them suitable for human use. If compressed they are generally changed in some dietetic respect.

A peculiar fact was brought out about the use of cheese and sugar in the United States. It was shown that the average American eats about three pounds of the former per year, while the use of the latter is twenty-five times as much. Cheese is considered a very good food and the class thinks more of it should be used.

SPRING BEE NOTES

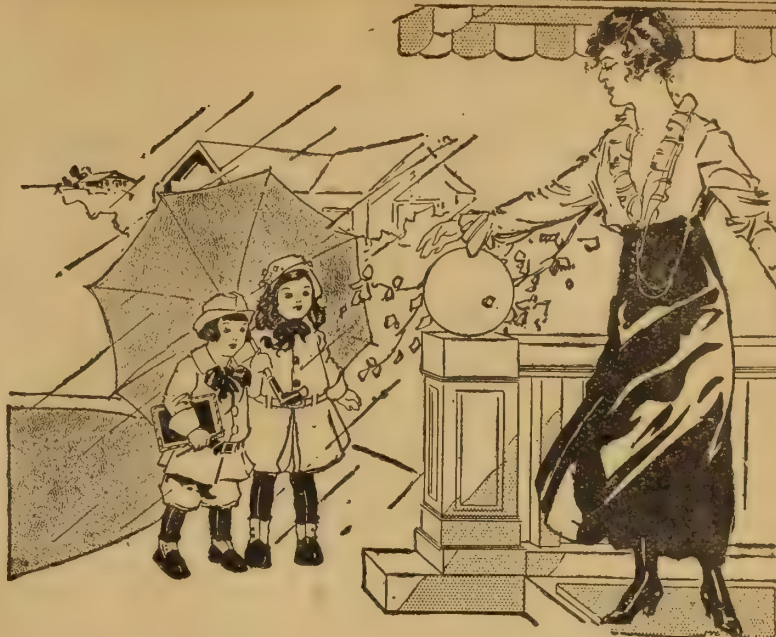
Spring is the dangerous season for the bees. Starvation may be overcome by feeding with the division board feeder.

Feed early in the spring before warm weather:

Keep rye flour in a box on some clean, bright hay in a sunny shed, out of the reach of stock, for the bees to work on every warm day until nature furnishes plenty of pollen, which they will collect in place of the rye flour. This will help to prevent spring dwindling.

It is the March, April, and May bees that are most valuable in producing strong colonies and abundant surplus of honey.

Do not raise drones. Cut out drone comb with the little blade of your



"Hurry, children—I've got a real treat for you."

Ghirardelli's Ground Chocolate

is a fortifying food beverage for all—from childhood to old age.

It comes PROTECTED—as all chocolate should—in ½-lb., 1-lb., and 3-lb. hermetically sealed cans.



Since 1852

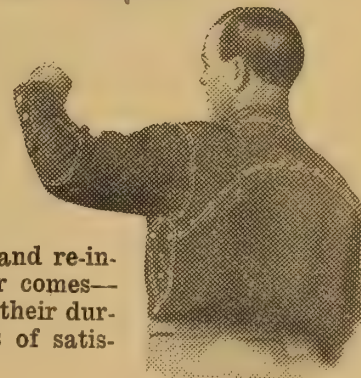
D. GHIRARDELLI CO.

San Francisco

Solve The Shirt Problem

By Buying "MADE-RITES"

You will learn what comfort and service a real work shirt can give.



They are made strong all over and reinforced where the wear and tear comes—double elbows, double yoke, and their durability is attested by thousands of satisfied wearers.

JOHN SCOWCROFT & SONS CO.

Also makers of Never-Rip Overalls and Work Clothes.

Ogden, Utah.

pocket knife and make wax of it. A frame of drone comb in the brood chamber means a dollar lost.

The reason some men don't succeed

is because they don't expect to—they quit before they begin.

Send in your order for Butter Wrappers today.

To Buy**FARMS****To Sell**

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

BIG BARGAINS

2 acres near 29th, South good land with water right, \$575 for cash, or will sell half for \$300. 80 acres 10 miles from Salt Lake, big snap \$8.00 per acre cash. 29 acres at Kaysville, house, stable, water right, first class for beets, tomatoes and potatoes. Big snap \$4,400.00.

640 acres good land, water right, part in hay, on account of sickness will sacrifice \$6,400.00 cash.

160 acres Utah County, house, stable, water right, farm implements and team goes with place, only \$11,000.00, terms or take some city property.

1900 acres extra well improved ranch, water right, implements and horses goes with place, only \$23,500.00. \$7,000 cash, balance easy, or might take a little unincumbered property on deal.

1260 acres well improved ranch with good range 50 miles from Salt Lake. Water right, part of land in hay and grain, all horses, cattle, hogs, crop and implements goes with place, only \$36,000.00, will take good city property for part pay.

GEO. W. DANLEY
W-2961 705 Walker Bank Building.
Salt Lake City.
N.B.

50 acres of the finest farm and garden land in the west. Located at Elberta, Utah. Will make a very suitable place for the man that wants a small farm at a reasonable price. Well adapted to raising any of the farm products, garden truck, alfalfa and beets. Within a short distance of two good mining camps affording a fine market for garden vegetables. On railroad giving excellent shipping facilities. Good schools adjacent. Prior water right at \$1.00 per acre if used. Look at this before you make a selection. Write or see

W. C. ALBERTSON
604 Dooly Bldg.
Salt Lake City, Utah.

FREE FARM LANDS

The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our Committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah.

GOOD LAND FOR SALE

I have two twenty-acre tracts, two forty-acre tracts and a ninety-acre tract of land on the west side of Salt Lake Valley, under the new canals, for sale this spring. Prices range from \$80 to \$125 per acre with water. Easy terms for purchasers. Last year I sold more than 2,000 acres of this land to residents of Salt Lake County. Please write or leave inquiries with the Utah Farmer, Salt Lake City, or Lehi office. Francis W. Kirkham.

\$3,750.00 takes a 50 acre farm at Elberta, Utah. Fine Soil, very suitable for growing Alfalfa, Fruit, Beets, Grain. Garden Truck or any farm products. Good water right at a very reasonable rate. Adjoining to good schools and is located on railroad. Suitable terms can be arranged. This is a real buy for the man that wants a small farm at a good price.

W. C. ALBERTSON
604 Dooly Bldg.
Salt Lake City, Utah.

IDAHO RANCH BARGAINS

280 acres, near good town and school, good buildings, good land. Price \$7,000.

240 acres, nearly all irrigated, splendid water right, five room house, barn, other buildings, 170 good cattle, 25 horses, machinery. Price \$24,000.

320 acres two miles from good town, all cultivated excepting 65 acres pasture, two houses, three granaries, stable, 19 horses and colts, five cattle, excellent equipment. Price \$14,000 part cash.

160 acres, near good town, in foot hills. 60 acres plowed, 60 acres pasture land, all fenced. House and other buildings, livestock and farm machinery. Complete \$4,500.

1040 acres ranch adjoining free range, one half under irrigation, all fenced, nearly all under cultivation. Price \$40.00 per acre including 150 head of Red Poll cattle, horses, farm property, farm equipment, machinery, etc. Will give terms.

FEDERAL LAND CO.
Ogden Utah

50 acres at Elberta, Utah, very fertile, well adapted for raising beets, alfalfa, fruit, garden truck and all farm products. Prior water right at \$1.00 per acre if used. Can be purchased for \$75.00 per acre if taken quick. A good buy for the man that wants a small farm at a reasonable price. Write or see

W. C. ALBERTSON
604 Dooly Bldg.
Salt Lake City, Utah.

MARKET GARDEN & FRUIT FARM FOR RENT.

50 acres, choicest east bench land with perfect water right, 1200 fruit trees and 30 acres open farming and garden land. House, sheds. Will make money making lease to properly equipped party. Location 11 miles Southeast Salt Lake City.

BURT & CARLQUIST COMPANY
No. 40 So. Main Street. Salt Lake City

Farm Loans

CURRENT RATES
FAVORABLE TERMS
LIBERAL AMOUNTS
ALWAYS IN FUNDS

MILLER & VIELE
803-807 Kearns Building
SALT LAKE CITY

Name Your Own Price for a rich Irrigated Farm

at Mosida, Utah County, Utah

This wonderful farming project, in the most fertile valley in Utah, will be **SOLD AT AUCTION** under order of the District Court, on Monday, March 19, at 10 a. m.

Farmers---Come and Bid!

This is positively the greatest opportunity ever offered in Utah to buy first class irrigated lands at a fraction of their actual value.

Adjoining lands were sold at \$100, \$150 and \$200 per acre. You may be able to buy these farms as low as \$40 to \$60 per acre. Offered in units of 40 acre farms.

SPECIAL NOTICE: The Mosida Hotel, Canal System and all other property of the Mosida Fruit Lands Co., will also be sold at public auction. Don't miss this opportunity!

For full particulars see Legal Notice in Thursday's Deseret Semi-Weekly News or write **AT ONCE** to

H. C. ALLEN, Receiver

1401 Walker Bank Building.

Salt Lake City.

IMPORTANT NOTICE

Owing to unfavorable weather conditions, the above **AUCTION SALE** will be postponed to the same hour and place on Monday morning, March 26, 1917.

H. C. ALLEN, Receiver.

RELIABLE FARM BARGAINS

\$450 per acre will buy a first-class acreage on the five-cent car line, joining the city on the south. This land can be had on no payment down and a long time on the balance. If you are serious of obtaining one acre, two acres for raising chickens in garden and still work in city, you cannot afford to overlook this opportunity.

Right in the city limits of Tremonton we have one of the best improved farms for sale on very easy terms. This property consists of 80 acres, with an eight-room modern house, big fine shade trees, small orchard and outbuildings. This property can be had on very easy terms. We will consider some Salt Lake property in exchange for this.

On the county road and on the line of the Oregon Short Line, southern Idaho, near a first-class town, we have a number of farms for sale. This land belongs to people living in the east, have instructed us to sell. We can cut this land into 40, 80, 160-acre tracts. There is first class water right, 4 1/2 acre-fee water per acre, good water for domestic purposes, land planted in alfalfa; nice little house, machinery and outbuildings; the place. If you are looking for a farm on which you can have immediate possession, this will appeal to you very much.

In the center of the Bear River valley we have two 40-acre tracts. This is one of the oldest farms in the valley and can be had for \$100 per acre, with ten years in which to pay at 7 per cent interest. This land lies on the main canal road and 1/2-mile from the center of town. It is near schools, churches, railroad station and there are also good conditions.

We have just secured one or two of the best farms in Cache valley. This land has been an estate and recently been divided. We will sell you a farm right near station of one of the best towns in the valley, all planted to alfalfa; good buildings; every inch of the ground is first class soil. If you are interested in good farming land in the valley, we can suit you in farms. Price, \$100 per acre including water rights and buildings and machinery.

We have one farm containing 80 acres, good eight-room house, fine six milk cows, 4 head of work horses, all necessary machinery, which we can sell for \$100 per acre, with payment down and ten years per cent interest on the balance. This certainly will appeal to people who are desirous of owning land in Cache valley.

We have a number of first-class ranches for sale, including everything. We can suit you as to price and terms.

We exchange homes for city property for city property for homes.

KIMBALL & RICHARD
"Land Merchants,"
55-58 Main Street,
Salt Lake City, Utah.
Phone—Wasatch 963.

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

BABY CHIX
From the best proven egg laying stock
C. White Leghorns and R. I. Reds.
See our Circular.

GUHAMA
BATES & SONS
POULTRY and FRUIT FARM
PROVO, UTAH. R.F.D. NO. 1.

FOR SALE CHEAP
70 successful incubators, size 320 egg.
30 one Jubilee, size 500 egg. Good as
new.
J. B. TUTTLE
x 286 Mantli, Utah

BABY CHICKS
We are now booking orders for
Spring Delivery in White Leghorns,
Brown Leghorns, R. I. Reds, Barred
Pullets and Black Minorcas. Anconas.
See our Circular.
THE ORLAND HATCHERY
Orland, Glenn Co., California.

BABY CHICKS
C. W. Leghorn chicks from real pro-
bably egg producers. Our chicks are
vigorous and will thrive because our
chicks are healthy and because no pul-
lets are used for hatching.
Our hens lay all winter.
Send for booklet.
MOUND VIEW FARM
R.D. No. 2 Brigham, Utah.

BEST 4 EGGS 4 BEAUTY
C. Rhode Island Reds, White Wyand-
ottes, S. C. Black Minorcas and White
Leghorns.
Bred for Eggs and standard require-
ments. Better start right. Eggs guaran-
teed to hatch or replaced free of
charge. Write for descriptive folder and
prices.
E. C. BLANPIED
x 29 Milford, Utah

1,000 Profit Per Acre
Growing The Alton Improved Red
Raspberry.
Don't winter kill, hardiest of all, the
most productive of any raspberry known.
Commences to ripen its enormous crop
the 1st of July, and continues to bear
heavily during July, August and Septem-
ber. Enormous size, delicious in flavor,
beautiful in color. It's a prize winner,
money making thing of all. It's as
ahead of the old common sorts as
the self binder is ahead of the old reap-
er. One acre is worth more than
ten acres in corn plants. Sold with a
three years guarantee, money back if not
satisfied. If desired I will let you
have them on one, two, or three years
contract. Let me help you get started in
this pleasant and profitable business.
Raspberry is very highly recommended
by Prof. Robert H. Stewart, County
Agricultural Agent, also by many others.
See a limited number of plants left.
Write me for free pamphlet, telling all
about this wonderful berry, a postal will
be sent to you if you are all sold.
Be quick before they are all sold.
H. A. PINEGAR,
Wellington, Utah.

SPRING SEED OATS
Write Stephen Boswell,
Nphi, Utah, for prices on
White Spring Seed Oats for
all farms.

WANTED to hear from owner of good
land for sale. State cash price and de-
scription. D. F. Bush, Minneapolis, Minn.

BABY CHICKS
From healthy, vigorous, prolific stock—
Reds, Minorcas, Barred Rock, White
Leghorn, Brown Leghorn, Buff Leghorn.
Now booking orders for spring delivery.
Prices consistent with quality.
ARCADY PLACE HENNERY
A. T. Smurthwaite, Manager.
Wellsville, Utah.

BABY CHICKS
All kinds, good stuff. Eggs for
setting from Prize Winning R. I.
Reds, \$1.50 to \$4.00. All kinds chick-
ens handled. Agent for De Laval Sep-
arators. **OGDEN FEED CO.**
J. H. Shafer, Prop.
Ogden Utah

FOR SALE
S. C. Brown Leghorn eggs for hatching
from bred to lay strain. Free range
stock. \$1.00 for 15; \$5.00 for 100 de-
livered. Fertility guaranteed.—D. Strat-
ton R. D. 1, Box 207, Provo, Utah.

Registered Stallions
FOR SALE
One Black, coming three
year old Station. One Grey,
coming three year old
Station. One Brown, com-
ing two year old Station.
Four Black, coming two
year old Station.
All registered in the
Percheron Society of
America Stud Book.
All strictly first-class
Stallions.
Will be sold at a very
reasonable price consider-
ing the quality.
All stock home raised.
W. S. HANSEN
Collinston Utah

RAG APPLE KORNDYKE 13TH
BULLS FOR SALE
From A R O dams which we are offer-
ing at reasonable prices, write us.
NELSON BROS.
Richmond Utah

FOR SALE
First class Registered Holsteins
Bulls, ranging in age from two
months to one year. Highest
class breeding. Farmers' Prices.
STATE INDUSTRIAL SCHOOL
Box 41, Ogden, Utah.

FOR SALE
Poland China Hogs for sale. Both Sexes
with papers.
A. C. ANDERSON
Ephraim Utah

SAVE MONEY ON YOUR LUMBER
BILL. WRITE US. PACIFIC COAST
SAWMILL COMPANY, Portland, Oregon.

FOR SALE
S. C. White Leghorn eggs
and baby chicks from the
choicest imported stock ob-
tainable. Eggs \$1.50 per 15,
\$3.75 per 50 and \$6.00 per
hundred. Chicks double the
price of eggs.
Satisfaction or Your Money
Back.

EDWIN BRICKERT
Beaver Utah

BIG TYPE
Poland Chinas

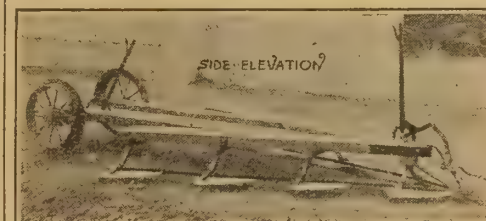
Stock from Fesserringer's and
Pfanders herds the greatest in
Iowa. Big boned, strong, easy
feeding animals that produce big
litters.

Eleven Great Sows
to farrow in April, bred to a son
of Fessy's Tim and the great King
of Wonder 1,180 pounds.

WEANLINGS FOR SALE
at reasonable prices. Also Head
boars (4) ready for service, bred
in the purple and look right.

Write your needs to
EARL BENNION
Breeder of Big Type Polands
Taylorsville Utah

THE HURST GRUBBER



The Hurst Grubber is one of the most
practical implements that any one can buy
who wants to clear new land of sage brush,
grease wood, etc. The grubber is 12 feet
long with a 6 feet 8 inches cutting width.
Take six horses to operate it. Does not
clog up with dirt. Blades are reversible.
Depth can be made from 1 to 5 inches.
Flange wheels hold grubber so it will not
skid around.

GUARANTEE
This implement is guaranteed against
defective workmanship and material, and
to do good and efficient work under fair
conditions. If for any cause proper
results are not obtained, please notify
the company of existing trouble and
further instruction will immediately be
forwarded, and then, if necessary, a
man will be sent to prove its efficiency.
Let us send you some testimonials
of those who have used our grubber.

Duroc Jersey Boars
Boars chuck full of Grand
Champion Breeding. Bred the
same way as our Utah State
Fair Winners. We have a great
lot of top spring Boars and are
offering them at bargain prices.
Every Boar guaranteed to
please or money refunded.
Write us today.
RICHARDS LIVE STOCK CO.
Virginia Idaho
The West's Best Durocs.

Attention Farmers

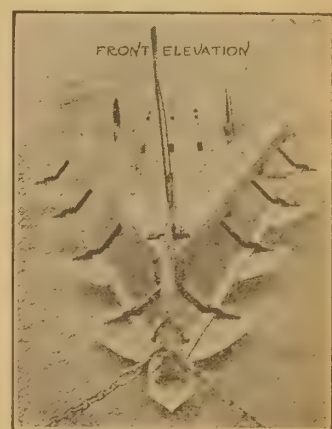
You can rent or purchase land
and water at Elberta, Utah
County, Utah. Deep, rich and
fertile soil, adapted to grain, beets,
potatoes and forage crops. Plow-
ing can be done now.

Come at once to Elberta, where
4,000 acres and water is waiting
farmers.

Write Edward T. Jones, Provo,
or M. B. Whitney, Elberta, Utah.

FOR SALE
White Flint Dry Land Seed Corn.
Well bred for five years. Gave a fifty
bushel yield last year. Price 4 cents
per pound, F. O. B. Modena.
SETH M. JONES
Enterprise Utah

WEBB DEFENDER
A pure bred Duroc boar, a son of
Richards Defender 1½ year old. A
fine animal \$100.00, 2 sows bred each
\$50.00.
HEBER J. EBB
Sandy Utah



Only a limited number on
hand and orders must be placed
at once. All shipments are
made from Provo, Utah. For
terms and prices write to Hurst
Grubber Co., Fairview, Utah.

Consolidated Music Co., Utah's Oldest and Largest Music House, Announces an Unparalleled Sale of Pianos, Player Pianos, and Grands. The entire line of Carstensen & Anson Co., which we purchased for cash at sacrificed prices, to be sold at from 25 to 50 per cent discount. Write us today for particulars

**SALE STARTS FRIDAY,
MARCH TWENTY-THIRD**

PIANOS

GROUP A

Your choice at \$197.

Including the following makes.

HOFFMANN
WILLARD
LESSING
SCHIRMER

Payments as low as \$4.00 monthly.

GROUP B

Your choice at \$235.

Here are many well known makes. Instruments that your friends have purchased and which the high quality is known.

HARVARD
SMITH & BARNES
HAMPTON
MELO DIGRANDE

(Small styles) STROHBER

Payments as low as \$6.00 monthly.

GROUP C

Your choice at \$285.

You may select one of these fine instruments with the perfect assurance that it is going to give you years of service.

LUDWIG
STORY & CLARK
LAFFARGUE
LIN DEMANN

(Small styles) KRQUKAUER
Payments as low as \$8.00 monthly.

GROUP D

Priced from \$70 up.

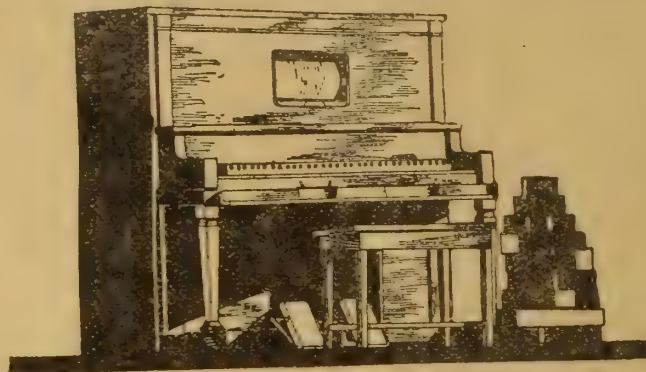
In this group we have placed our stock of used instruments. Many of these are practically new, the others have been through our shops and are in fine condition.

KNABE
EVERETT
SMITH & BARNES
LINDEMANN
KIMBALL
CABLE-NELSON
KINGSBURY
LUDWIG

and many others.

TERMS TO SUIT YOU.

WRITE US TODAY.



EASY TERMS ON ANY INSTRUMENT

In order to quickly dispose of this mammoth stock and to facilitate the handling of so many instruments we have grouped these instruments, classifying them according to the quality and cost. This gives the purchaser a better idea of the values now offered.

To buy outright a stock as large as Carstensen & Anson Company is no small transaction and we feel not a little proud of our ability to handle a deal of such large proportions. The Carstensen & Anson Company have retired entirely from business and the entire stock was purchased by us at a figure far below the wholesale price. This opportunity coming as it does when pianos like all other merchandising is jumping skyward in price is certainly unusual and is truly a blessing to families who have no instrument in their homes. These instruments were bought cheap and they are going to be sold cheap. A deal of this size for cash further emphasizes our leadership in buying and liberality in selling.

Along with the new instruments from the C. A. stock we have put all our own stock of used pianos and players. These have all gone through our shop and have been put in first class condition. Every used instrument is guaranteed the same as the new. Ask for the list of slightly used instruments when you write.

A word about the terms. We can arrange practically any terms you want either monthly, quarterly or semi-annually. Terms as low as \$4.00 per month on uprights and \$8.00 per month on players are accepted.

Write us today for full information and state which group of instruments you think you would be most interested in, also whether you prefer an upright or player. Many of the finest players in this sale at \$345 and \$395. You would pay 50 to 100 per cent more elsewhere for instruments of the same quality. Write today while you are thinking of it.

FREIGHT PAID ON ALL INSTRUMENTS

**YOUR OWN TERMS ON
ANY INSTRUMENT**

PLAYER PIANOS

WITH ALL PLAYER PIANOS WE
GIVE \$25.00 MUSIC AND BENCH.

GROUP E

A group of latest style instruments
in oak, mahogany or walnut.

YOUR CHOICE AT \$345

HOFFMANN
WILLARD
LESSING

Payments as low as \$8.00 monthly.

GROUP F

These are all well known makes and in selecting from this group you are perfectly assured of permanent service.

YOUR CHOICE AT \$395

STORY & CLARK
STROHBER
SMITH & BARNES
HAMPTON
LUDWIG
LINDEMANN

Payments as low as \$10.00 monthly.

GROUP G

In this group we have placed our slightly used players and new ones of odd styles, also new sample players. This lot represents unparalleled values.

PRICED FROM \$265 UP.

APOLLO
WHITNEY
WEBER PIANOLA
AUTOPIANO
STROHBER
KIMBALL

AND MANY OTHERS EQUALLY
WELL KNOWN.

TERMS YOUR OWN—IN REASON.

WRITE US TODAY.

**Mail this for particulars
TODAY**

Consolidated Music Co.

ESTABLISHED
1862

ROYAL W. DAYNES, Manager

13-19 E. FIRST SOUTH ST

CAPITAL
\$500,000.

Fifty five years of successful business and sales to more than
20,000 customers is your guarantee of permanent satisfaction.

CONSOLIDATED MUSIC CO.
Salt Lake, Utah.

Gentlemen:

Please send me full information
about your Pianos } on sale, par-
ticularly group Players } ticularly group.....

Name

Address

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 36

LEHI AND SALT LAKE CITY, UTAH

APRIL 7, 1917

The Silo—A Profitable Investment

Andrew Livingston.

learn by experience—is just as today as ever—and the past winter has taught many of us a good lesson, or lessons, in feeding.

One of the most profitable investments I ever made on my farm was a silo built last year. I believed it profitable or else I would never have gone to the expense and trouble of building one, but the past winter converted me more than ever that the silo should be a part of every farmer's equipment who has a number of livestock to feed.

Some of our farms are already showing the need of more livestock for them in order to secure the produce they produce to build them. The feed problem is an important one in order to increase livestock and to my mind the silo will help solve it.

There are a few important things in the construction of a silo, first it must be efficient; the walls should be water and air tight, so as to retain the moisture, smooth enough to permit even, easy sliding of the silage and stout enough to stand bursting pressure. Second—Durability; the structure should be stormproof, should with stand the elements of decay, and if possible, should be fire-proof. It should require a minimum of attention and expense for repairs. Third—Ease to construction; the silo requires a minimum of material and minimum of labor. Fourth—Cheapness; all things being equal, the best is the one that costs the least. Many costly mistakes have been made in the construction of silos with the amount of information available we ought to profit by the fellow's mistakes.

My experience this winter shows that the addition of corn silage to the ration not only decreases materially the cost of gains in raising our livestock but usually increases the gains more rapid. Corn is one of the best silo crops. It produces a high yield, a large crop, and is not very expensive to produce when compared with other crops. Corn has proven to be some of the best keeping qualities of any crop used for silage. Other crops such as the clover may be used but we have not tried them. We plan to try some peas and oats this year. The curing of grain in the silo has many adherents where dairying is practiced and where grains may

be more surely grown than corn. The crops thus siloed are wheat, barley, oats and rye, and in some instances a mixture of two or three of these. Wheat is generally too valuable to devote it to such a use, but when cheap it may be thus used with propriety. Barley is usually siloed along with peas. Another favorite mixture is peas and oats. The crops are cut

a little underripe and when siloed water is usually added to take away the danger of forming a dry mold.

It is only a few years ago when we had but a very small number of silos. It was thought we did not need the silo, because we could raise and cure alfalfa so well.

The silo has beyond all question come to stay. In some states they

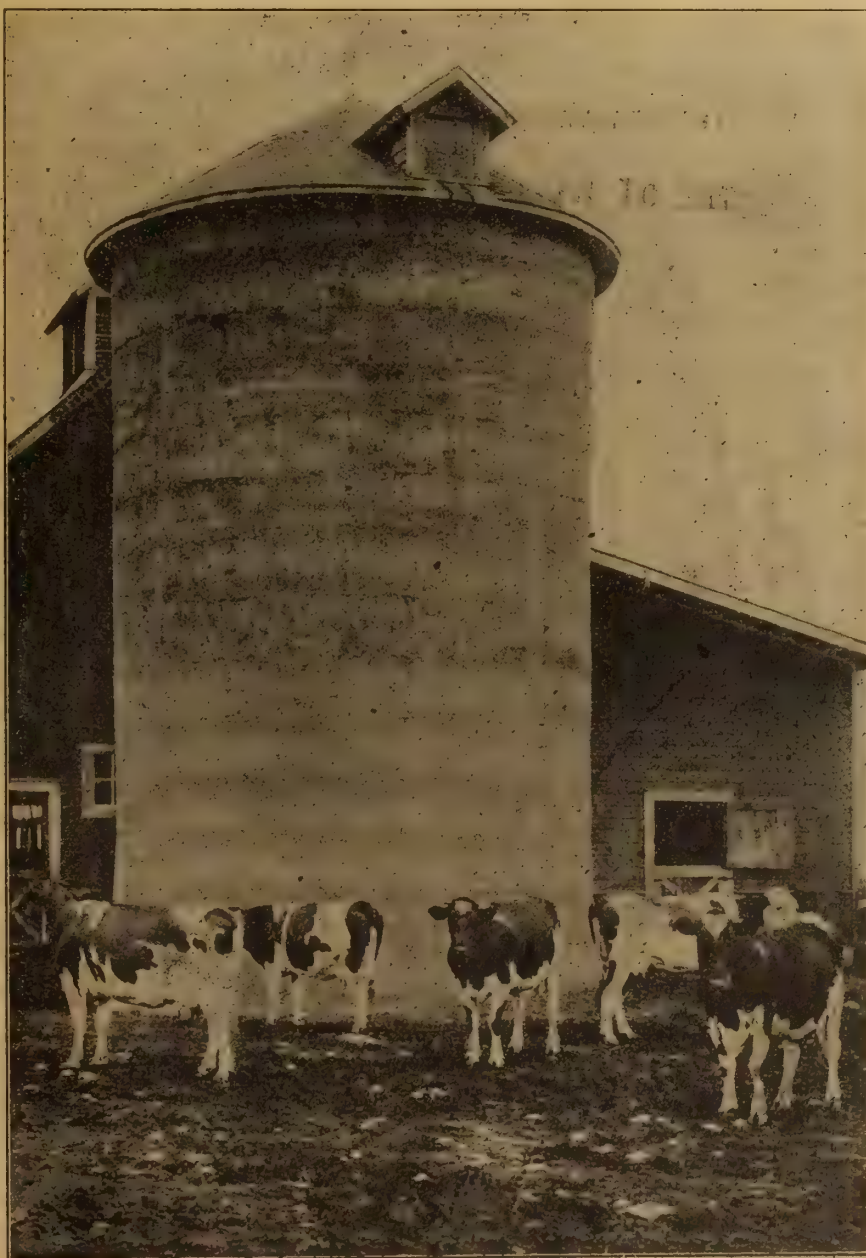
are numbered by the thousands. It is also worthy of note that they are found in counties where the farmers are fairly well to do to a greater extent than in counties where the opposite condition prevails. It is not fair to conclude under such conditions that they have helped to bring about such conditions. It is true that for various reasons some who may have used silos for a time have given them up, but these are the exception and not the rule. They have been usually looked upon as valuable chiefly in providing succulent foods in winter, when these are most wanted, but more and more are they coming to be used for supplying food also in summer and especially in the late summer, when the pastures are usually dry.

Many of our experiment stations have carefully tried out the silo and they now recommend it. Experiments have shown that the balanced ration which ensilage will give the dairyman or livestock feeder not only reduced the cost of feeding but made all the feeds more profitable.

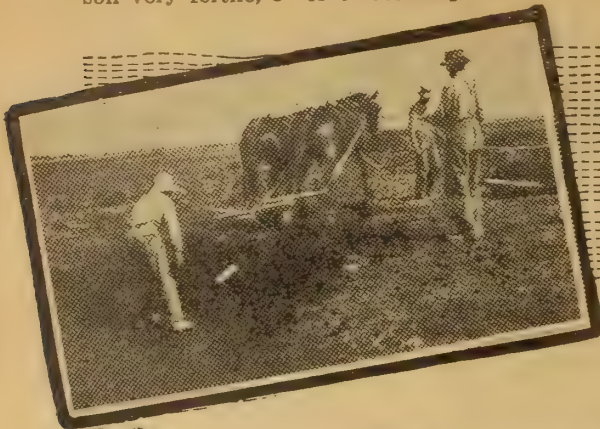
I did not keep any records of my feeding but my neighbor did and I am going to give his story as told to me. He built a 16 x 30 silo during September. He filled his silo with corn that was a little ripe but watched it very careful. About December 1st he opened it and commenced feeding it, to his milch cows at the rate of a bushel basket full to three cows and latter increased it to a basket to two cows twice a day. His careful estimate was that his corn crop brought him \$80.00 per acre. It cost him \$43.00 exclusive of his own work with team to cut and place the corn in the silo. He suggests that 3 or 4 farmers go in together to buy a cutter. To him the silo has proved to be a money maker.

There is little chance for alfalfa to go back to the old time low prices and we must prepare to meet the higher prices of feeds with more careful feeding and balance rations. The silo is one of the ways to help us. It is a profitable investment as nearly every farmer will tell you who has one. A number of new silos will be built in our county this year.

You miss getting many good things by failing to ask for them.



Tiled drained marsh land at Richland Acres: soil very fertile, 3 to 6 feet deep.



Outlet of one of the tile drains at Richland Acres—carrying off the water.



Sugar beet field at Richland Acres—yielding 15 to 20 tons per acre.



20 years in which to pay for land like this

Examine these photographs closely—each and every was taken on some portion of Richland Acres, the beautiful tract of farm land lying two and a half miles west of Logan, on the floor of fertile Cache Valley.

Here is tiled drained land that is unexcelled for beets—for hay—for garden truck—for fruits and grains. Here is soil ranging to six feet in depth—with the finest water right in Utah. Richland Acres comprises 2800 acres of the finest farm land in the West—land that will raise 15 and 20 tons of beets to the acre. Many of the shrewdest farmers in Utah have already purchased land at Richland Acres—others are buying daily. In addition to remarkable soil fertility, perfect drainage and plenty of cheap irrigating water, you have electric lights, railroads, telephones, schools, good roads and rural free delivery. Logan is but three miles away; the railroad runs directly through the property; there are sugar factories and condensed milk factories close by.

LOW PRICES---EASY TERMS

You can buy a farm at Richland acres from \$132 an

acre up to \$202. You pay only from \$10 to \$20 per acre down and then your annual payments per acre are from \$10 to \$16 per year.

Remember—that is less than the average farm rent. If you are a good farmer—if you know how to work—if you are willing to work—you know that on land of such rich fertility as Richland Acres you can make your farm pay for itself on these easy terms—as you go along, AND PUT MONEY IN THE BANK BESIDES EVERY YEAR. WE want experienced, successful men for Richland Acres. You should act immediately. This land will not last long at the rate it is going now. Call on us, telephone, telegraph, or write to the following authorized agents:

ED. D. SMITH & SONS
Exchange Place, Salt Lake.

JOSEPH H. WATKINS
Brigham City.

H. E. SMOOT
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Stand of timothy at Richland Acres.



Another view of timothy land at Richland Acres.—one of the heaviest crops of timothy in the valley.



Beautiful farm lands you will find at Richland Acres.

Live Stock

SWINE TROUBLES.

Dr. H. J. Frederick.

A number of sows have lately been distributed in different parts of the State to the boys who are in Club Work. Some of these animals have been and are sick and this trouble has in many instances been due to the methods by which the swine have been handled. Many on securing their allotment, in their ambition to succeed, overfed the animals and in most in-

stances it was a sudden change of feed too, causing severe trouble.

The weather has been cold, both while the swine were in transit and on arriving here hence some contracted a severe affection of the respiratory organs, sore throat, pharangitis, laryngitis, bronchitis, and congestion of the lungs. The posterior part of the throat in hogs is usually quite small and narrow, especially if the animal is fat. Any sudden or extreme change in temperature may cause an inflammation of these parts almost closing the already small passage way which is meant for the passage of food to the oesophagus and stomach, and

air to the trachea and lungs, therefore the animal may have difficulty in swallowing and breathing and cough frequently. For this affection, the following is good treatment:—Food should be of a warm, sloppy character, such that is easily swallowed without much pain to the animal. 3 ozs. of syrup, 2 tincture of aconite, 1 dram tincture of Belladonnae, and 2 drams drams chlorate of potash. This is mixed into a paste and applied to the molar teeth or the inside of the mouth by the aid of a small paddle, in one half to one teaspoonful doses every three hours. It reduces fever, overcomes congestion and relieves

the pain and is beneficial on the general condition. Also rub the outside of the throat with camphorated oil.

When swine are highly fed and when sudden change of feed are allowed with little or no exercise, constipation is usually the result. Plenty of good pure water and exercise is absolutely necessary to avoid trouble. Constipation is responsible for the derangement of the entire system effecting all body organs.

A good treatment for constipation. Give from 2 to 4 ozs. of castor oil or 10 to 15 grains of calomel or be the feed if the animal will eat.

(Continued on page 7)

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VOLUME XIII. LEHI, UTAH, SATURDAY, APRIL 7, 1917 No. 36

Dairying In Utah

Geo. B. Caine, Prof Dairying U. A. C.

Among the states of the West, Utah ranks very well as a dairy state. The past five years have seen great development along various lines of dairying and the future promises even greater results. The State has many desirable conditions that contribute directly to the greater development of the industry: various kinds of soil; the moderate, varied climate; the comparatively cheap feeds of all kinds; and the good markets prevailing in many of the larger valleys.

The soil and climate are such that they make the production of practically all the best feeds possible. Any of the irrigated lands grow alfalfa, the king of all roughage, in abundance. The dry lands will produce both alfalfa and the various small grains that are also excellent feeds. The lower irrigated lands afford excellent pasturage where the many dairy matrons spend a good part of the year feeding on the succulent grasses. Almost any of the irrigated lands that grow alfalfa also produce our relatively new crop corn. This crop alone, the past year, is saving the dairymen of Utah many thousands of dollars. With a climate that has considerable variation but never an extreme of any sort, there are great possibilities for high production. The cool summer days and nights make it possible for old cows to graze and work with no apparent distress from the heat. This condition alone in many of our older developed dairy sections is a constant drawback to high production without artificial help, which means great expense.

The winter climate, though cold for short periods, is never so severe that it does not give the animals the best of appetites and stimulates the eating of a great deal of feed which of course means greater production. This winter condition has another feature. It eliminates the building of very expensive barns for the purpose of keeping animals warm. Many herds are kept under open sheds and are housed only long enough for grain feeding and milking.

The chief pre-requisite to high production is an abundance of palatable, nutritious feed. Of all feeds the roughage is generally the economical basis on which the ration should be calculated. Alfalfa is conceded by all dairymen and feeding experts to be the most palatable and nutritious roughage. This crop grows abundantly in all sections of Utah and yields from three to seven tons per acre are common.

On any of the Utah farms, barley is grown with very little trouble. The general price of barley makes it available to almost any of the dairy farmers. Bran, a by-product of flour mills, is also obtainable at a very moderate

price. Barley with bran makes an economical, nutritious, laxative and palatable concentrate that aids materially in high milk production.

The newest feed to attract attention and to reduce the cost of production of dairy products in Utah is corn silage. The past few years have seen much development in the building of silos and the production of silage. There are several hundred silos in the state at the present time, and practically

The figures, rather conservatively estimated, show the production and consumption of the dairy products of the state to be:

Annual production of butter 5,500,000 pounds.

Annual production of cheese 2,000,000 pounds.

Annual production of milk 47,500,000 pounds (condensed).

Of the above about 5,000,000 pounds of condensed milk is consumed in the



To own such a bunch of calves should be the pride of every farmer. Give them the best of care, they are your future cows.

every one is full of good silage. It is a conservative estimate to say that the silos will pay for their cost of construction in two seasons like 1916. Many of the farms in the state have produced from ten to fifteen tons of corn silage per acre, and practically all of them have produced from eight to ten tons. Alfalfa, corn silage and a little grain make a good and economical ration for the average Utah dairy cow.

There is one prime essential to success with any farm product and that is consumption. Utah is especially helpful to dairy producers by having condensed milk plants which aid materially in keeping the price of butter fat high. At the present time the Utah Condensed Milk Company is paying fifty cents per pound for butter fat. The past year has shown much development of small creameries and cheese factories, all over the state, and these will tend in the future to keep the prices more regular than in the past. There is always a demand for good products on the open market so with a little care there is no reason why Utah should not be producing the things that the market demands,

state, the balance being shipped to other sections. Butter and cheese show just the reverse. We are importing 500,000 pounds of butter and 1,000,000 of cheese into the state annually. With these conditions there is a good chance for many of our sections to develop materially. Cheese manufacturing has shown a remarkable increase in the past year, and we are working to decrease importation, and to increase production in the years to come. As the state of Utah is growing an enormous quantity of beets and with good prospects for even a larger acreage next year, the dairy cow is bound to become a more important factor. The fertility that is absolutely necessary for production of sugar beets can not be obtained from any other source so well as from the dairy cow.

During the past five years sections of Utah have been strong feeders for the surrounding states in dairy cattle. It is fairly estimated that Utah has ninety-two thousand dairy cows that are worth approximately five million dollars. At the present writing the number will be slightly short of this due to the fact that many carloads have recently been shipped to Nevada,

Colorado, Idaho, Montana, and Wyoming. Selling is quite necessary under certain condition but if followed too extensively it means a decrease in production rather than an increase.

Jerseys, Holsteins, Guernseys and Ayrshires include most of the breeds of dairy cattle that are in the state at the present time. They rank in popularity as named above, the Jerseys and Holsteins being about equal as to numbers. The families that are being bred are the Hood Farm Stain's of Torono's and Stope Pogis, theirs are Golden Jolly, Noble of Oaklands and Spirmfield Owl. Among the Holsteins the famous Rayapple Roandyke, Pontiacs and De Kol families are all fairly well represented. The breeding is based principally on the big fundamental thing "production," that is the chief essential to prosperity among average dairy men. With the enormous demand prevailing throughout the United States at the present time for dairy products, there is no doubt that the Utah farmers will grasp the opportunity and increase the industry many fold in the immediate future.

WORTH WHILE SUGGESTIONS

Cleanliness in poultry culture is just as necessary as in human culture.

Every poultry raiser keeps enough fire to heat sufficient water for a warm drink for the fowls twice a day. Over 60 per cent of the egg is water—lack of water will cut the egg yield quicker than short rations.

Changing the water frequently means better health for the birds; quick changes prevent disease spreading.

We can take a good many leaves out of the book of nature by observing closely our domesticated animals.

We can put a mighty big kink in the chain of time by doing the right thing at the right time.

Patching the crack that lets in the sunlight today keeps out the trouble-causing drafts that will come in to-night.

Put turkeys on your list for next season's work; a half dozen eggs will give you a start.

The reason for sheltering the layers is to prevent their feed from being converted into heat instead of eggs.

Do not expect the layers to find enough food on range to even keep them half warm at this season of the year.

There's an opening for the man who can take the backache out of a hoe, a mighty good one at that, and there's a better one for the man who can make hens profitable to the same extent pullets are made profitable.

Dairying

MILKING THE COW.

Provided that they have always been kindly treated, dairy cows are generally no trouble to milk. As a rule, they appreciate being milked. You very often notice a cow will start chewing her cud when she is being milked, which is a sure sign of contentment, this being especially noticeable in the case of very heavy milkers, which get their vessel much distended from one milking to another. The relief afforded them by withdrawing the milk is easily noticeable. Not infrequently, however, certain difficulties due to a variety of causes are experienced in the milking of cows, but there is no doubt that a good many of them could be averted if only they were better treated. A man that is in charge of the dairy herd cannot be too kind and gentle in handling them. A man with a hasty temper should not be employed among cows at all, for he will often for the merest trifle ill-use them. Cows that have always been treated kindly are a pleasure to milk; far different from ill-treated ones, which are afraid of their life for a milker to approach them. It is a fact that cows know one milker from another, and often appreciate one in preference to another simply because the method of milking suits her best. The best milkers are not always the fastest, for all cows do not like being milked fast.

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SALT LAKE CITY

If you milk fast a cow that has not a big opening in her teat it gives her pain, which causes her to be very restless, and she will not give her milk down as freely as though she were milked more slowly. A good milker that understands his work will very soon find the way each cow likes to be milked.

A frequent cause of annoyance to milkers is a hard cow in the dairy. The usual practice is for one to milk her at night and another in the morning, which is not the best thing to do, for two people never milk alike. Often you find one milker will milk two short strokes, while another milks one long one. Now the short-stroke milker will make a cow ten times harder to milk, while the other, if he continued to milk her regularly for a week, would make her much easier. Milking is a very healthy and a very pleasant occupation when carried out in the right way. There is, of course, only one right way—that is, to treat them kindly. A kind word will often do more than a pat with the stool. Of course, some cows are bad tempered and stubborn, and need a good deal of patience and trouble to get them out of it, but on our farm here we milk a big dairy of cows, and bring a lot of heifers in every year, and I always break them in myself, and I find that where kindness and firmness will not succeed nothing else will. But there is one thing to bear in mind—never give in until you are master. Once a cow finds she is master she will give a lot of trouble, but if she finds you are too good for her she will generally submit at once, and give not further trouble.

BEDDING THE FARM ANIMALS

Throughout the entire year all the live stock kept and fed in the stables or other places should, for comfort and best results, be well supplied with some good quality of bedding. The material most plentiful and largely used is straw. But seasoned and dry sawdust, leaves from the forest trees and the portion of shredded fodder not eaten, are all fine for bedding. All such material keeps the animals clean, comfortable in cold weather, and thoroughly absorbs all the liquids in the stalls and feeding places.

Our experience in caring for manure, and it is the testimony of all who have given the subject thought, is that if the fluids are taken up by the use of absorbents, and are thoroughly incorporated with the solids, they furnish a large quantity of plant food that otherwise is largely lost. Hence, the necessity and value of properly bedding the farm animals, and then applying all the manure so obtained—practices no farmer can neglect or ignore without great loss in the producing capacity of his fields.

At times and under certain circumstances to employ, but while they stimulate to employ, but while they stimulate the growth of crops, they add no humus to the soil like is common when bulky stable or barnyard manure is used. Very much of the soil has been largely depleted of its vegetable matter, and for best producing capacity must have it restored as much as possible. Bulky stable manure, heavy sod turned under, and all kinds of green crops plowed down, are fine for adding fresh humus to the soil.

In speaking of materials to be employed as bedding, and being aware that the straw crops of the farms do and must furnish the great bulk of it, I want to give my experience as to the best way to use it. It is to pass

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of Style, Elegance and Utility found only in more expensive models. It is a car which satisfies and gratifies alike the particular driver and the particular dealer.

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quick response, its ample reserve power in the sand and on the hills, its ease of operation, and its riding comfort on any road.

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all the straw used for bedding through a straw cutter before using it. Only those, I am aware, can do this who have very roomy places to store the straw at threshing time, and some kind of power to operate a straw cutter. Others not possessing such conveniences should employ all the bedding possible, even if it is coarse and long, and as soon as able get in a position for greater conveniences.

It is the farmer's privilege, and he should feel it his duty to grow as fine crops as possible, but to do this he must make the most he can of the manure.—W. A. G.

THE GOLDEN RULE.

Be kind to the horse. Don't berate him because he does something which should not have been done. Perhaps he had the right motive, but in his dumb way was unable to express it. Perhaps he wanted to help you, possibly he meant no evil, though outwardly he seemed perverse and stubborn. Give him credit for at least trying to be good, for there are few horses which are naturally bad.

Many persons take it for granted that when a horse does wrong he is tended to do so, and they therefore punish him for it. Now this action only aggravates the matter, and, continued, will result in an incorrigible animal, made so solely from mistreatment by his master. This explains why some horses are bad.

The best policy is to be kind to the horse. Remember that he is a dumb animal. Don't expect as much understanding from him as you expect of men. Remember that of all the animals which aid men, the horse is the most useful. Give him credit for that. Don't punish him for all the wrongs he does, for possibly they are not so intended. Try to put yourself in his place, and don't forget that he is a slave.

Be kind to him and see for yourself if your work does not proceed more smoothly than ever before. Follow the Golden Rule and treat your horse as you would wish him to treat you if your positions were reversed. Investigate for once and you will never say again that kindness doesn't pay.—Our Dumb Animals.

EQUIPMENT IMPORTANT FACTOR

Ben R. Eldredge.

Of the three prime requisites for successful dairying; high grade animals, good feed, and proper equipment, the last, although often overlooked, is by no means least important.

There are some yards and stables where it takes an immense amount of help to get the dairy work done and others where the same amount of help would result in almost twice the product. Stables that are well lighted, well arranged, with roomy feeding alleys, hard floors with even surface which makes the work of cleaning much less; all of these things make for a low cost of production. Yet you will go into hundreds of dairy barns where there are no windows, where the feed is crowded through narrow spaces into cluttered mangers, where the floors are rough and uneven so that hours of work will not make them clean because cleanliness is impossible under such conditions.

Very often stock have to be driven considerable distances to water and this work alone adds to the cost of the care of stock and the irregularity that necessarily follows adds to the cost of the product in that such irregularity always results in a curtailment in the volume of the milk. Then, too, the efficiency of the workers is retarded by such conditions. They seem to be carrying a burden of inconvenience that causes them to lag in their work. Let us consider conditions about our own farms, carefully look

over the herds, cut out the "boarders" and we will cut the cost of production. Let us begin an experiment by feeding those best milkers a little rolled barley, chopped corn (chop it fine,) or oats or a mixture of all to balance up the lucerne and see if we can't increase our output sufficiently to justify the added expense of a grain feed. On this point, however, a satisfactory conclusion can only be reached by a consistent use of the scales and Babcock test. Let some light into the barn and see how much easier it is to get about and how much sooner the milking is done. Saving in time will lessen the cost of production. Just bear in mind the cost of doing things and apply it to your dairy work and you will find that the market will cease to be the bugbear that it has been in the past. With two million pounds of butter being brought into this State annually when we should be supplying an export demand, there is no need to worry about the market.

If I were asked today what one thing might be generally introduced for the greatest advancement of dairying in this State, I would answer records from the milk scales and the Babcock test.

WELLSVILLE COW TESTING ASSOCIATION FOR MARCH, 1917

By LeRoy W. Hillam.

Despite severe weather conditions and a shortage of feed the Wellsville Cow Testing Association made better records during the month of March than for any previous month of its running. Forty five herds with a total of 331 cows were tested during the month. Twenty three herds with a total of 191 cows made over 30 pounds of fat.


This month 76 cows are on the "Honor Roll," being 8 more cows to gain this distinction than in any other previous month. Of this number 29 produced over 50 pounds, 9 over 60 pounds, and 4 over 70 pounds of butter at. 79 cows produced over 1000 pounds of milk. Mr. John Darley's three year old grade Jersey "Roanie II" leads the Association with a production of 78.9 pounds of fat for the month. The high milk producing cow for the month is Thomas Darley's 12-year old grade Holstein cow "Blackie" she producing 1931 pounds of milk.

The high herd for the month is owned by John Darley. His 17 Jerseys averaged 1119 pounds of milk and 56.43 pounds of fat, per cow. The average of the ten highest herds for the month with a total of 81 cows is 42.33 pounds of fat. This is practically double the average of the ten poorest herds whose average for 86 cows was 21.44 pounds of fat per cow. The Association average as a whole for the 331 cows on test was 30.70 pounds of fat per cow. This is the first time that the Association average has reached the 30-pound mark.

At present four members are using daily milk sheets. During the month a pure bred Holstein bull was purchased by Mr. Thomas Darley to replace the grade bull in his herd. Five more "Boarders" were sent to the butcher's block during the month. The following men have entered their herds in the Association for the second six months of testing; John Brenchley, Joseph R. Brown, Thomas M. Leishman, and C. L. Williams.

Due to the shortage of hay, much grain is being fed in the Association and as a result cows are producing more butter fat and milk on the ration of hay and grain and a little beet

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pulp than they previously produced on alfalfa hay and beet pulp alone. The reason is that the rations are more balanced and the cow is better able to carry on her function of milk

production to the fullest extent. Had grain been fed more liberally during the winter we would not have had such a shortage of hay at the present time.



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upon application.

Have you heard any one complaining about the
lack of moisture this spring?

A little extra time spent preparing the seed bed
means a great deal to your crop at harvest time—
bigger and better returns.

The horse that has been resting all winter
should not be over worked to start with. Start
him out gradually. You will make time in the long
run by doing it.

You can do your country a service this year by
producing all the food stuff possible. Right now
is the time to start. Better seeds, better farm-
ing.

The loss to farmers from farm pests and
diseases among our crops amounts to a great deal
each year. Treat your seeds and test their ger-
minating power before planting.

The season is late but do not make the mistake
of getting on your land too early. On sandy land
it is not so bad, but a day or two too early on
heavy soil may do more harm than good.

Take care of your health. It is well to be
successful in life. Splendid to have plenty of
money with a fat bank account to drain from in
cases of emergency; but you will never live to
enjoy these beneficiaries if you do not take care
of your health and guard against untimely, avoid-
able sicknesses.

There is plenty of fresh air out doors. Why not
sleep out there and get some of it? Build a sleep-
ing porch where you can breathe deep of the fresh
air. Too little attention is given to feeding our
bodies with fresh air when it is so plentiful.
Sleep out in the open.

This is the time of the year when flowing wells
should be shut off and only enough water used
for the livestock or domestic purposes. Some
people seem to think that a flowing well will run
on for ever, the way they waste the water that
flows from them. Conserve this valuable water
until a time when it can be put to good use. Large
wells allowed to run upon the lowlands will water-
log the land and reduce the pressure of wells for
use on higher land. Flowing wells are a valuable
asset to any farm but do not abuse their use.

PLAN A GARDEN

The present shortage of food such as flour,
potatoes, meat, etc., is a great problem.

The garden, with its early vegetables, is one
of the quickest and best means of helping the
situation.

By planting now it will only be a few weeks
until you can have early vegetables.

Make every foot of land produce something
this year, make the waste places contribute to
the necessary food supply.

The more you save because of your garden the
more you will have to sell in the fall. The garden
will reduce the living expenses.

Plan to make every foot of the garden grow
something. Make the fences useful, some vine
or bush will climb them and reward you with
vegetables or fruits.

PREPARATION OF SEED BED.

The early frosts of last fall prevented many
farmers from doing their usual fall plowing. This
condition seems to be general all over the country.
One reports says, "Less than half the usual acre-
age of ground was plowed last fall." We have
been trying to help this situation by giving some
timely articles on the preparation of seed bed
where fall plowing was not done.

This is the year, more than any past one, that
you ought to produce the largest crops possible,
and upon the condition of your seed bed will de-
pend to a certain extent the amount you will have
at harvest time. Don't be afraid to do a little ex-
tra work in preparing your seed bed. It will pay
you to do it. It will cost just as much to cul-
tivate and irrigate a half crop as it would a big
crop. You can not expect to get a big harvest
from a poor seed bed.

ANOTHER WAY TO HELP.

According to figures and reports, the high cost
of living could be greatly reduced if a better
method of marketing our farm products was work-
ed out. The difference between the price paid
by consumer and producer is too great. A farmer
spends the greater part of a year to produce his
crop.

Some dealer or commission man will make as
much profit handling or selling, as the farmer did
to produce the crop. The dealer often spends
only a short time doing it and goes to a very little
risk if any at all.

Why should it take 116 per cent to market the
crop? Something is wrong. The people com-
plain and they have a right too, but the farmer
gets less than one-half of what his products are
sold for to the consumer who uses them. If this
question could be solved now, while the cost of

living is so high, it would help the one who pays
the final cost, and there would be some prospect
of the farmer's getting his proper share.

WHAT ABOUT YOUR ROADS

The condition of your roads, the road that runs
by your home or farm, at this time of the year is
a test of how good a road it really is. The road
may belong to the county or state but there should
be a certain amount of personal pride to see that
the road in front of your place is in good con-
dition. A load of gravel, or a few hours work will
help a bad place and may save hours of time for
some one else.

Spend a little time with a drag on the roads
when they begin to dry up from the winter's
snow and storms. A permanent road is the kind
to have if possible. Make the best, however, of
the roads you use, and don't be afraid to spend
a little time on them for your own good and
benefit of the traveling public.

MORE PROFIT—LESS WORK.

If you will follow the reports that are made by
the cow testing associations, you will see that so
many cows are "weeded out" each month. A
certain member finds out that some of his cows
are not paying, as a result he sells them. A case
to illustrate our point: a man joins a cow testing
association with 14 cows, he sells four of them
and is now getting more profit from the ten cows
than he formerly did from the whole herd. Now
the question we want to ask the man who is milk-
ing cows is, how many of your cows are unpro-
fitable and should be weeded out? How can you
tell unless you weigh the milk and test the
quality.

Why do a lot of needless work feeding and milk-
ing cows that are unprofitable. This brings home
the suggestion often made, that it is not always
the man who works hardest who makes the most
money.

Now is the time for every farmer to make the
most of present conditions. You can accomplish
this by planning well your work, using your head
for this will determine your profits. It is not
always the amount of work you do, that will
govern the amount of profits you make.

FARM LOANS AT FIVE PERCENT.

Money at five percent on long time loans seem
more like a dream than a reality. The Federal
Farm Loan Banks have all been organized and an
official announcement say that they will start
the mortgage rate of interest at five percent.
This will be a big saving to our farmers who have
been paying 7, 8 or 10 percent.

Some of our bankers do not think that the
banks will be a success and that we can never
hope for such a low rate of interest, that a
farmer will not go into this method of borrowing
money because of the red tape necessary to com-
ply with the government standards.

The Utah Farmer has been criticized because
we have boosted these Federal Farm Loan As-
sociations and Banks. If the other officials are like
Dr. George Thomas, who was appointed to take
Berkeley bank from Utah, you can be assured
that they will be a success.

Already we have a number of local associations
organized and the near future will tell how suc-
cessful these banks will be. Get together and
organize. If you do not know how send to the
Federal Farm Loan Bureau at Washington D. C.
for information and literature. We have a large
amount in our office and will gladly do what
we can to help you.

SWINE TROUBLES

(Continued from page 2)

severe purge is required 5 to 8 drops of croton oil in olive oil may also be given.

Administering medicine to swine is attended with great difficulty as well as danger unless the animal takes it in the feed. When it is necessary to reach a pig with medicine, a piece of rubber nose should be put on the neck of the bottle containing the medicine and tied firmly. The hog is secured or tied, open the mouth with a piece of wood, introduce the rubber nose and pour the medicine slowly. In severe cases of constipation, injections of soap and warm water should not be neglected.

After an attack of this kind, the bowels need a stimulating tonic, as 8 to 10 grains of iron sulphate and 2 to 3 grains of nux vomica, 3 times a day for a week. Administration of the calomel will also help get rid of intestinal worms if there should be any. Provide a good, dry bed, plenty of water, good ventilation, a variety of feed, grains, not excessive but regular, roots, silage and alfalfa, hay on hand and see that they have exercise, then your swine troubles will be few.

CARE OF BROOD SOW.

John T. Caine III.

This is the time of year requiring the most careful attention from the owners of swine. Farrowing time is always one of worry as much depends on good management at this period.

Condition of Sow.

The brood sow should be in good flesh but not overly fat. It is not necessary nor advantageous to have her thin, for if the sow does not have the fat stored on her body she will not be able to feed her pigs properly. Be sure that the pregnant sow has a large lot and takes plenty of exercise. You will not get strong pigs from a sow that has been closely used. If the sow insists on lying around, drive her slowly for some distance every day.

Feed.

Care should be taken to provide plenty of good, clean feed for the sow. Feed just enough so that she will clean all up in a short time and never so much that any remains in the trough. The sow is not anxious for her feed if she misses a meal. Skim milk is one of the best feeds and should be

used wherever possible. Alfalfa and roots are good feeds when given with some grain and are advised. For grains feed shorts, corn, ground barley, bran and a few oats.

Ration. Shorts—2 parts, barley or corn—2 parts, bran—1 part, oats—1 part.

To be fed with alfalfa or with alfalfa and skim milk.

As soon as signs of farrowing are seen cut the feed down materially so that you will not produce a feverish condition in the sow. After farrowing give only warm water for first twelve hours and for next few days small amounts of light feeds, such as gruels made from bran and shorts. Overfeeding at this period will cause trouble. After a few days you can begin to feed liberally provided the little pigs get plenty of exercise.

Pens.

Have a clean dry pen for the sow to farrow in and be sure that there are no holes in the floor or around the sides where the little pigs might get lost. Arrange a rail around the sides of the pen so that the sow will not be able to lie down on the pigs when they are bunched up in the corners. This rail can be made by nailing a 2 x 6 plank around the walls about 9 inches from the floor so that it extends 6 inches out into the pen.

Be careful about bedding. Put in just a small amount of chaff or cut straw. If a large amount of straw is used the little pigs will get down under it and the sow not knowing where they are, will lie on them. Remember that a pig saved is a pig earned.

Give sow plenty of exercise.

Feed liberally on clean feeds.

Cut out some feed at farrowing time.

Prepare the pen carefully.

Do not use much bedding.

Good management not good luck means success.

Lehi, Utah, March 5, 1917.

Utah Farmer:

Gentlemen:—I have a very rocky side hill sloping to the south. I wish to follow your suggestion in the Farmer and plant every foot of ground to something.

What is best for me to plant on this side hill? It is just a small piece of ground (6 square rods) and covered with cobble rocks, but I should like to plant something in it. Kindly advise me through your paper.

Yours respectfully,

A. Subscriber.

Answered by Dr. F. S. Harris.

It is probable that some kind of grass would do as well on your rocky hill side as any crops. There are a great many kinds of grass from which to select, but if I understand your conditions, I believe that *Bromus inermis* would do as well as any variety.

CORN GROWING UNDER IRRIGATION

The greatest natural limitations to corn growing under irrigation in many semiarid sections are short growing seasons and extreme difference between day and night temperatures. These effects may be partially overcome by growing early-maturing and adapted varieties, but it is not to be expected that as large yields can be secured as are possible in sections where the seasons are long and temperatures more uniform.

Many failures, however, are due to preventable causes. The most common mistakes are over irrigation, too frequent irrigations, too early irrigation, and too little cultivation. The farmer who has been accustomed to regard



Early Johnson Strawberries

10 days to 2 weeks earlier than other varieties. This famous Strawberry was propagated in Brigham and is the most prolific and hardy of them all.

The berries are a large size and dark red color.

They're good shippers and the best berry canned of all the varieties.

100 plants Post Paid \$1.50; 200—\$2.50; 500—\$5.50.

CHESAPEAKE STRAWBERRY PLANTS

I have a few thousand of these in an extra good bearing strain. They're the best known shippers. 500 plants Post Paid \$4.50, 1000—\$7.50.

Strawberry plants ready for shipment from April 5th to June 1st.

D. H. ROSENBAUM GROWER

Brigham City, Utah.

Seeds With a Lineage

are the Bumper Crop Producers. You get them from

PORTER-WALTON CO.

Seed and Nursery Specialists

SALT LAKE

Full Descriptive Catalog Free.

a shortage of moisture as the chief cause of crop failure too often concludes that irrigation will cure all ills and insure large yields.

When the surface soil is kept wet the temperatures are lowered by rapid evaporation, and the result is slower growth and delayed maturity. If cultivation be delayed until the surface soil begins to bake and crack, roots are exposed and cultivation may then be very injurious.

Small corn plants do not require a large moisture supply. Early irrigations stimulate an excessive growth of stalk. The large, sappy stalks usually do not produce as much grain as those normally developed and are less likely to reach maturity before fall frosts occur.

On land that is well cultivated and kept free from weeds it is usually unnecessary to irrigate corn until about the time the tassels and silks begin to appear. A good supply of water is needed at this time, and irrigations are of much benefit to the plants in producing and developing ears. These irrigations should be thorough and followed as soon as possible by cultivation.

Irrigating in furrows or shallow ditches between the corn rows is better than flooding the whole surface and allowing the water to come in contact with the cornstalks.

The number of irrigations necessary depends upon the type of soil and the amount of moisture supplied by rain. On average loam soils two or three irrigations are usually sufficient. Late irrigations delay maturity.

It all depends on what you're living for. If you're living only to get ahead, then procrastination is a thief; but if you're living to enjoy life along the way, it is sometimes a gift-bringer.

Preserve Your Shoes

There's no excuse for the rapid deterioration of leather in shoes when an occasional application of—

DUCK-BACK Shoe Oil

will keep the leather soft, tough and water-proof. Shoes treated with this natural oil for shoe leather keeps the feet dry and warm. Order a can today, and preserve your shoes. All progressive dealers.

Utah Oil Refining Co.

Refiners

Salt Lake City, Utah.

"What sort of a hand is that new hired man of yours, 'Lias?" asked Farmer Medders of his neighbor. "What kind of a hand?" roared the irate neighbor. "He ain't no hand at all, consarn him. He's a sore thumb!"

EAR PERFECT TAGS
Samples Free
ATTACHED INSTANTANEOUSLY
Name and Address. Numbered if Desired.
LEG BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

SEEDS
Purity Brand
BEST BY TEST
Send Today For Our Big
FREE Catalog.
Vogeler Seed Co.
Salt Lake City, Utah.

The Give-and-Take is Free-and-Easy

President Suspenders for comfort

and long service. The "give and take" feature adjusts with every movement of the body freely and easily.



Dealers everywhere sell Presidents at 50c. Ask for them by name. Look for "President" on the buckle. Accept no others—WE refund your money—if they don't please you.
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For the invalid

as well as
those in
perfect
health



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Cocoa
is an ideal
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wholesome.



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ESTABLISHED 1780 DORCHESTER, MASS.

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LOSSES SURELY PREVENTED
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Low-priced, fresh, reliable, preferred by western stockmen, because they protect where other vaccines fail.



Write for booklet and testimonials.
10-dose pkg. Blackleg Pills, \$1.00
50-dose pkg. Blackleg Pills, \$4.00
Use any injector, but Cutter's simplest and strongest.
The superiority of Cutter products is due to over 15 years of specializing in VACCINES AND SERUMS ONLY. INSIST ON CUTTER'S. If unobtainable, order direct.
The Cutter Laboratory, Berkeley, California

HOME

DO YOU WASTE THESE
THINGS IN COOKING

Ida C. Bailey Allen.

The following methods of using many of the things that housewives are prone to throw away:

Dry Stale Bread and Crusts.—Put through medium knife of food-chopper and store in jars with perforated tops to prevent rancidity. Keep buttered bread or toast separate and use soon after preparing. Use for fish, vegetable, and meat scallops; gravy, soup, and bisque thickenings; for griddlecakes, cake, muffins, biscuits, and fritters, puddings, blanc-mange, and cereals, as well as all sorts of crumming purposes.

Stale Cake.—May be used in puddings, fritters, gelatins, blanc-mange, fruit molds, and in making fresh cake and steamed puddings.

Trimnings from Salad Greens.—Stew in water or stock, together with a little pickle spice, add rice to thicken (three tablespoonfuls to a quart of vegetable stock) and, at the end of the cooking, strain and season with a bouillon cube. A real blood tonic. Use cress in the same way, also mince any leftover sprigs, and sprinkle over steak or fish.

Cauliflower Leaves.—Cook twice as long as the cauliflower, chop season as greens, and use to supplement the flower itself.

Celery Tips.—Spread on papers, dry, store in jars, and use for seasoning. Use fresh as a basis for soup, a garnish for salad or meats, and for frying in a thin batter.

Leftover Vegetables.—Peas, carrots, Lima or string beans, corn, asparagus, radishes, green peppers, cabbage, cauliflower; use alone, or in any combination in soups, either in stock, or with bouillon cubes, salads, or scallops. Turnips, carrots, beets, Lima beans, potatoes, and so forth. Use in vegetable hash, soups, casseroles with ham or smoked fish. Stewed or scalloped tomatoes:—use in casseroles, with baked beans, in soups, to make aspic, in sauces, and bread or cereal dressings.

Vegetable Parings.—Scrub vegetables well and put all parings, including those from potatoes, into a general stock-pot.

Cooked Cereals.—Use in stock-pot, soups, scallops, meat, fish, and vegetable loaves, griddle-cakes, waffles, muffins, puddings, and croquettes.

Leftover Scrambled, Poached, or Fried Eggs.—Use minced in sandwiches, potato or fish salad, or soup.

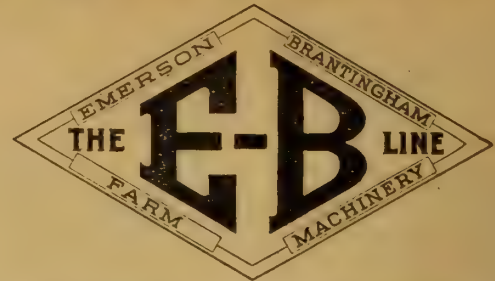
Rice Water.—Use in stock-pot, or as base for soup.

Sour Milk.—Use in making biscuits, all kinds of grain muffins, steamed or baked brown, whole wheat, or graham bread, spice cake, spiced cookies, plain cake, ginger-bread, and ginger drop-cookies, butter cakes, boiled salad dressing.

Sour Cream.—Use in making fruit ice-creams, cream fruit-herbets, chicken gravy, cheese-cake, cooked salad dressing, uncooked cole-slaw dressing, whipped in mayonnaise, to enrich cream-of-tomato soup, and in shortening any of the quick grain breads, gingerbreads, and in making dark-colored cakes.

Bacon, Ham and Sausage Fat.—Use for sauteing when savory tastes are desired, in seasoning spaghetti, savory hominy, browning meat for stews, or casseroles, in shortening gingerbread

What E. B. Means To You



The E-B trade-mark is your guarantee of Quality
It shows the way to easier, better and more profitable farming. For 64 years the E-B line of Farm Machinery has been standard.

Since 1852 a continually increasing demand from users of farm machinery for the E-B Foot Lift Line resulted in the building of a complete new plant equipped with special machinery and every modern labor saving device.

This means much to the farmer of today. When he selects implements to save money, lighten labor, or speed up work on the farm, he can turn to those bearing the E-B trade-mark with the assurance that these machines embody every feature that years of actual field work can recommend.

MILLER-CAHOON COMPANY

Murray, Utah

Idaho Falls, Idaho

Less Seed·Even Growth

The most perfect method of depositing seed yet devised is found in the fluted force feed and double disc furrow openers with depth regulating bands of the

Moline-Monitor Double-Disc Beet Drill

Seed falls in front of disc furrow openers. Every grain planted at uniform depth, properly covered, germinates quickly and evenly—insures a maximum yield.

Covering rollers with divided center do not pack soil directly over seed, thus leaving a division point through which plants may readily break.

Strong construction, easy operation, perfect work under all conditions. Ask your Moline dealer about this machine or write us for illustrated literature.

Western Moline Plow Co.,

Salt Lake City, Utah Dept. 33

THE MOLINE LINE INCLUDES

Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Racks, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Rippers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Vehicles, Wagons.



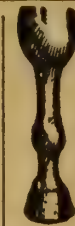
or spicy cakes of dark color, in making spice and ginger cookies, and in shortening quick grain breads, or the crusts for meat, vegetable, or fish pies.

Chicken Fat.—Try out and use in making "three-minute pie-crust," cakes, cookies, and for sauteing.

Beef Fat and Fat from Stock-pot.—Fry out and use with one-third lard for deep fat frying, or plain for sauteing; beef fat alone for shortening cakes, cookies, puddings, biscuits, dumplings, and pie-crust.

Odds and Ends of Fruit.—Use in fruit salads, fruit gelatins, fruit cups, fruit soups, fruit beverages, tapiocas, compotes of rice and farina, and in case of juicy berries, as raspberries, strawberries, and so on; use in drinks and for corn-starch puddings.

Leftover Fish.—Use in croquettes with rice or potato, creamed as a



ABSORBIN

Reduces Bursal Enlargement, Thickened, Swollen Tissues, Curbs, Filled Tendons, Swelling from Bruises or Strains, Stops Spavin Lameness, allays pain. Does not blister, remove the hair, lay up the horse. \$2.00 a bottle at druggists or delivered. Book 1 M. for ABSORBINE, JR., for mankind.

Antiseptic liniment for bruises, cuts, wounds, strains, painful, swollen veins or glands. Heals and soothes. \$1.00 a bottle at druggists or postpaid. Will tell you more if you write. Made in the U. S. A. by W. F. YOUNG, P.D.F., 142 Temple St., Springfield, Mass.

sauce over brown rice, in salads with celery, cabbage, radishes, or shredded romaine, cress or lettuce, or use in season cream-of-fish soup, or



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If you want comfort along with the best workmanship and lasting qualities in your work shirts, you should wear

SCOWCROFT'S "MADE-RITE"

They are the strongest and most comfortable work shirts made.

**JOHN SCOWCROFT & SONS
COMPANY**

Also MAKERS of
NEVER-RIP OVERALLS
and Work Clothes
OGDEN, UTAH.

The Two Good Reasons

Admitting that foreign-made sugars may be as white and as sweet as our western-made sugar, there are still two good reasons for favoring—

EXTRA FINE Table and Preserving Sugar ABSOLUTELY PURE

made by Utah-Idaho Sugar Company. This sugar has no chance to become contaminated through travel and much handling. It comes to you absolutely pure—almost directly from the sanitary factory in which it is made.

Another thing to remember is that it keeps your dollars at home and you profit thereby. Sold in 10, 25, 50 and 100 pound bags.

Order this perfect sugar by name.

Made by

**UTAH-IDAHO SUGAR
COMPANY**

stuffing peppers, tomatoes, cucumbers, or cabbage-leaves.

Bits of Cheese and Rinds.—Put cheese scraps through food-chopper and use in Welsh rabbit; cheese sauce for fish, rice, or homminy; in vegetable scallops; creamed potatoes, German style; cheese croquettes, etc.; grate cheese from rinds and use on spaghetti, in creamed vegetables, to make cheese sticks, cheese biscuits, cheese pie-crust for fruit pies, cheese toast, and serve with stock vegetable soups.

LEARNING THE VALUE OF SUGAR

"The three most important staples of daily consumption are bread, meat, and sugar," says Lord Devonport, the British Food Controller, in announcing to the British public the reasons for a limitation of the individual consumption of these essential food products.

The war has been a great educator in the food values. The old idea that sugar was a luxury, which dated back to the time when its cost was so high that only the well-to-do could indulge in it, persisted long after the growth of the sugar industry and the improvement in processes of extraction had made it so cheap and plentiful that it assumed its proper place in the dietary of civilized and progressive peoples.

The insistent demand for sugar from the men in the trenches and likewise from the workers engaged in the strenuous task of providing the materials of war, have provided an object lesson that could hardly have been gained in any other way.

The truth that sugar is energy, that its value in giving energy and providing power to resist fatigue is unequaled by any other foodstuff, is more widely realized now than ever before. Evidence that this is the case is furnished by the fact that even while they are engaged to the utmost in the great struggle that is under way, the belligerent nations are finding time to lay plans for the systematic development of sugar production after the close of the war.

SMILE.

Joke with him who jostles you,
Smile on him who hurries you,
Laugh at him who pushes you,
It doesn't cost a cent!

Don't be carrying 'round that chip;
Wink your eye and curve your lip,
And from life's sunshine take a sip,
It doesn't cost a cent!

Don't be always first to rile
Your neighbor—give him just a smile,
It will cheer the dullest, while
It doesn't cost a cent!

—The Forge.

The old man, by many years of persistent labor had built up a big business and was about to retire. Calling in his son, he told him of his plans, and then asked:

"How about it; can I leave and entrust the business to you?"

"Well, Pop, here's a better plan. Suppose you work just a couple of years more, and then we can retire together."

If you want to know whether you are destined to be a success or not, you can easily find out, the test is simple and infallible. Are you able to save money? If not, drop out. You will lose—James J. Hill.



this can cut table costs

in more than a million homes in the West. Yours should be among them.

You'll find a "rounded" spoon of Ghirardelli's Ground Chocolate is equal in chocolate strength to the "heaping" spoon of others.

A cup of Ghirardelli's for breakfast will do more than please the taste—it nourishes—enables you to do away with more expensive foods.

*Tomorrow try a sensible
breakfast—a cup of*

Ghirardelli's Ground Chocolate

Since 1852

D. GHIRARDELLI CO. San Francisco

L. D. S. Spring Conference

AT

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APRIL 4th to 8th Inc., 1917

Low Excursion Rates via Salt Lake Route



Tickets on Sale at All
Utah Stations as Follows:

Nephi, Eureka, Mammoth,
Silver City, and points
East, April 3rd to 8th in-
clusive. Good returning
until April 12th.

All other points, on sale
April 2nd to 7th inclusive.
Good returning until April
15th.

Extra Accommodations Will be Provided.

See your agent for tickets and further particulars.
Wm. Warner, A. G. P. A., Salt Lake City, Utah.

Selecting and Preparing the Soil For Sugar Beet Growing

By J. C. Wheelon.

In growing sugar beets the farmer should never lose sight of the fact that he is dealing with a high-priced crop; that by the time the crop is up and thinned and had the second hoeing and the second cultivating, and is about ready for the first irrigation, say about the first of July, he has got more money invested in the crop than in any other crop he has on the farm. It is at the same time the best money crop the farmer can produce. It will survive more of the adverse conditions of climate and season than any other crop we know.

We should not forget, however, that by the first of July we have got just as much money invested in a poor crop of sugar beets as we have if the crop be destined to produce a heavy yield.

We have often heretofore merely recommended an "Increase of Crops," never saying a word about "Maximum Yields. Our experience in growing sugar beets has given the object lesson that the most essential and important aim of every man who puts any kind of seed into the soil should be to provide every aid and facility to guarantee "Maximum Yields," no other thought should be entertained.

We always notice that the success-

ful farmer selects good soil; they manure intelligently; fertilize liberally, work incessantly, and secure good yields at a substantial profit while their neighbors glean the small or average and unprofitable crops.

Plants, like man or animal, require proper environment; they demand food, air, warmth, and good care. The seed bed is the home of the plant. It should be deep, mellow, rich in plant food, thoroughly drained and ventilated.

Many people in giving advice in the selection of land, will specify that the soil must be of a certain texture, it must contain so much sand, so much silt, so much clay, etc., and when we go out to find a soil that will fill the specifications, we will find it only in isolated cases. This advice may apply to some kinds of crops, but I have seen heavy yields of sugar beets harvested on soils that were so light that its shifting nature in light winds made it difficult to hold it until the plants were up and able to hold it. I have seen the same satisfactory and profitable results on every class of soil (so far as its natural texture is concerned) from this to the clays and down to salt grass and tule swale soils. Therefore, the selection of a field for the growing of sugar beets is reduced to the few essentials of drainage, tillage, a well-balanced fertility and moisture control, and these few essentials can be either already found or can be made on 95 per cent of the farms in the arid and semi-arid districts.

In most farms under irrigation, at least one-third of the farm can be found that possesses these essentials. In going over the farm to select the future beet field we do not need a chemist nor a technical expert. We must have, however, some "hoss" sense, the more the better. You can get it from college, from books, or from practice, or from all combined, but you must have it.

We find a wheat stubble ground that looks well; it will till easily, is clean and smooth; the history of this field tells us it has been in dry farm wheat for 20 years. We discard it; we want this first field of beets on this farm to make a substantial profit; it should have the essentials. In order to do this, the stubble field can be made to do it, but at present the nitrogen has for years been shipped away in the wheat, the humus has been burned or carted away in the straw and chaff, the tillage has been shallow and infrequent.

We may next find a stubble field that has been in rotation of wheat, oats, and barley for years, and is irrigated. This must be good, because it has raised grain every year—not a profitable crop every year, but a fair average crop; it pays the interest on the mortgage, but it will never pay the principal. The irrigation has furnished moisture enough to stimulate, but not increase the fixed plant foods, so here we have drawn heavily on the reserve but not returned enough to the soil and we have just a trifle less balance in the essentials than in the dry grain stubble land. It is in a splendid condition to build up, but we can build it up much cheaper than by growing sugar beets on it.

We may find some land that is grow-

High Prices Will Continue

during next year.

It will be to your interest to produce the biggest crops possible, both in field and garden. Our catalogue tells all about Vogeler's Purity Seeds.

SEND FOR A FREE COPY

Vogeler Seed Co.

SALT LAKE CITY, UTAH



"The Tank that Lasts a Lifetime"

A FULL STOCK OF STORAGE
AND STOCK WATERING
TANKS CARRIED IN
STOCK BY

**GREEN MACHINERY &
MANUFACTURING CO.**

Machinery Merchants & Manufacturers
American Building, 338 South Main St.
SALT LAKE CITY, UTAH

Using Sugar

When housewives use sugar that is made in the west, such as Table and Preserving Sugar, they are securing a product that is not only 100 per cent pure but which also contains 98 per cent of energy when consumed as food—a body builder, a strength builder and an energy builder.

YOU NEED THIS FOOD

Our Service

And What It Means To You

A TWO-NAME GUARANTY—OURS AND
THE MANUFACTURER'S

As a rule you would rather take a two-name note than a single name note, wouldn't you?

No matter how well you might know a man nor how much confidence you might have in him, if he wanted to give you his note guaranteeing future payment of a loan, you'd just a little rather have some other reliable party share the responsibility with him.

When we sell an implement, we guarantee it to be all we claim it to be.

But behind us stands the manufacturer of that implement—he shares the responsibility with us. This two-name guaranty applies to every implement we sell—no

matter whether it be an engine plow or spike-tooth harrow. Big and small purchasers are protected equally.

We wouldn't handle goods of the manufacturer who wouldn't stand back of everything he claimed for them.

And so you have real assurance that you are getting just what we say you are getting when you buy from us. Both our and the manufacturer's reputations are at stake.

Drop around to the store some day—we want you to see what we have.

Consolidated Wagon & Machine Co

UTAH IDAHO WYOMING NEVADA



Get More Milk

You may regulate to a degree the milk production of your cows. Tests have been made to prove that foods containing certain elements will produce certain results.



Stock Feed

a scientifically balanced, highly nutritious feed, composed of oats, barley, cottonseed meal and sugar beet molasses.

Ask your dealer to send you Sunripe Stock Feed next time.

Utah Cereal Food Co.
Ogden, Utah



ing salt grass and fox-tail grass. These lands will often start off in productiveness if drained and well-tilled, but this takes time as well as means.

We find, however, on every irrigated farm, a clean, smooth field, or part of a field, of hay, alfalfa or clover or a mixture of legumes. This is the place for sugar beets and the longer it has grown the hay the better.

This hay stubble tells us that the soil is well possessed of the lime and mineral plant foods or it would not have started to grow in the first place. We know that the dropped leaves and stems, the crowns and roots, of the plants have accumulated a great store of vegetables mould that requires only one of the essentials, tillage (the easiest and cheapest), to create at once a wealth of humus, nitrogen and phosphorus to complete the fertility balance that is required to support a beet cropping until by the use of hay on the stubble ground the beet growing area can be extended.

IRRIGATORS' QUERIES ANSWERED

O. W. Isrealson, U. A. C.

Would a law of the kind which you suggest deprive irrigators in any way of their vested water rights?

No, it is impossible for any legislative enactment to deprive irrigators of vested water rights. The provision of a satisfactory code with respect to the determination of water rights would, in no way, affect those rights which are vested, except to make definite the quantity of water to which the various parties who hold vested rights, are entitled to. As a matter of fact, a law controlling the proper adjudication of water rights and distribution of water, instead of depriving irrigators of vested rights, would on the contrary, assure to them protection of the right which they now hold; a protection which, under present laws, the State cannot in practice extend. In other words, it is now necessary for each individual irrigator or company, to defend his water right against suit by any prospective irrigators, whereas under a proper system of control he would be defended, or protected by the State. Of course, there is no doubt but that in some cases, where persons are using quantities of water which are far in excess of their actual needs; state control, on the basis of the doctrine of appropriation and beneficial use would insist that water be used more economically, and consequently, the possibility of extending the irrigated area in some sections would undoubtedly exist. In other words, under present court decisions throughout Utah and the West, no person is entitled to more water than what he needs for beneficial use; even though early court decrees have granted quantities of water in excess of this amount.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF AUGUST 24, 1912.

of Utah Farmer, published Saturday, at Lehi, Utah, for April, 1917. Post-office address, Lehi, Utah, Managing Editor, Business Manager, James M. Kirkham.

Owners: (If a corporation, give its name and the names and addresses of stockholders holding 1 per cent or more of total stock. Deseret Farmer Pub. Co.; James M. Kirkham, Lehi, Utah; John A. Widtsoe, Logan, Utah; Thos. Judd, Laverkin, Utah; W. S. Hansen, Fielding, Utah; Jesse Knight, Provo, Utah; R. L. Anderson Estate,



THE HOUSE OF NO DUST

Do your cleaning the easy—the economical—the clean way.

There is no time O' year when an Electric Vacuum Cleaner pays for itself so quickly as in the spring.

There is house cleaning to be done; spring rains mean more dirt tracked indoors; and summer heat is coming when the broom is more than ever an abomination.

Think back over the days you have used a broom! Sweep and dust—sweep and dust—day in and day out—and still there is dirt left in carpets and rugs—dirt the broom can't get out.

AN ELECTRIC VACUUM CLEANER

comes equipped with special attachments for cleaning rugs, carpets, floors, walls, ceilings, draperies, furniture, clothing, beds and other household furniture. Electric Cleaners are today used in tens of thousands of homes. They are so reduced in price that there is no longer any reason why you should endure the inconvenience of the old time broom.

We are eager to have you come in and see the wonderful work the Electric Cleaner does—how it saves time, labor, trouble and money.

While you are making easy payments on an Electric Cleaner, the cleaner is MAKING and SAVING money for you.

If you cannot find it convenient to come to our store for a demonstration—just telephone and our representative will bring an Electric Cleaner to your home for a free trial.

UTAH POWER & LIGHT CO.

"Efficient Public Service"

Salt Lake City, Utah; L. N. Stohl, Salt Lake City, John Q. Adams Logan, Utah; F. S. Harris, Logan, Utah; O. A. Kirkham, Salt Lake City, Utah. Known bondholders, mortgages, and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities. (If there are none, so state.) None. JAMES M. KIRKHAM. Sworn to and subscribed before me this 5th day of April, 1917. (Seal.) E. L. CHIPMAN, Notary Public.

Here and There On The Farm

SPRING MANAGEMENT OF BEES E. F. Philips.

The duty of the beekeeper in the spring is to get plenty of bees in time for the honey-flow. If this is not done his work is a failure. The population of the colony is reduced during the winter, especially where wintering conditions are not the best, and this must be corrected if the colony is to get the full honey crop. It is poor beekeeping to have weak colonies at the beginning of the honey-flow from which the surplus crop is obtained.

After brood-rearing gets under way, bees need three things—room for heavy brood-rearing, an abundance of stores, and protection. A common error is to cramp the colony by failing to provide empty cells for the reception of eggs. Each colony should ultimately have the equivalent of at least eight Langstroth frames entirely full of brood, so that even a single 10-frame hive is scarcely large enough at this season. Some beekeepers practice giving a second hive-body during this period of heavy breeding. This is especially necessary for colonies that have abundant stores.

If in early spring the weather is suitable and if nectar is available, the bees will add considerably to their hoards of honey, but they use it so rapidly that it is seldom that any gain in the stores occurs even during fruit bloom. However, since the weather is uncertain at this season, the bee-

keeper should not depend too much on incoming nectar to supply the needs of his bees. If they are short of stores, feed a warm thick syrup made of granulated sugar and feed lavishly. This will be stored by the bees in the brood-combs and used as needed. The syrup may be half water and half sugar or thicker if preferred. There is no better investment in beekeeping than to give abundant supplies in the spring.

Bees generate considerable heat in rearing brood rapidly, for the temperature of the brood must be maintained nearly at human blood heat. The better they are protected from winds and the more insulation they have, the easier it is for them to keep the proper temperature and the faster they build up.

On some warm day the hives should be opened and given a spring house-cleaning. At this time one wing of the queen should be clipped so that when swarming time comes she cannot fly to the woods with the swarm. If any queenless colonies are discovered (having no brood) they should be united with colonies having queens. This can be done simply by setting the queenless colony on top.

The stimulation to heavy brood-rearing should occupy six to eight weeks previous to the surplus honey-flow and every beekeeper should know when that comes in his locality. If he is a beginner, any beekeeper who



There's but
ONE
Caterpillar
Holt builds
it

THOUSANDS of owners in thirty countries have nothing but praise for the wonderful Caterpillar Tractor—nothing but praise for its design and for the sound mechanical construction of it.

The famous Caterpillar track, plus the steady, powerful, economical Caterpillar motor (built entirely in the Holt shops), plus the best of materials, workmanship and inspection throughout—these have made the Caterpillar the foremost tractor of the world today. Other tractors, lacking one or more of these elements, cannot achieve the same success.

There's only one Caterpillar—Holt builds it. Don't say Caterpillar unless you refer to this tractor.

We will gladly send details on all models.

Holt
MANUFACTURING CO., INC.

Stockton San Francisco Los Angeles Portland Spokane

CATERPILLAR

Reg. U.S. Pat. Off.

is older in the work can give that information. If a colony has a good queen and plenty of empty cells for egg-laying, is well supplied with stores and is protected from cold and wind, one may expect a colony which is capable of storing the maximum crop.

Having gone to all this trouble to get plenty of bees in the hive, the beekeeper will readily see that he should do everything in his power to prevent swarming. Swarming just before or during the honey-flow is the greatest drawback to a good crop. Experienced beekeepers have worked out methods by which this can largely be prevented and every beekeeper should study these methods.

HOW TO TEST SEED CORN

A Very Simple Test Described by Utah Agricultural College.

A simple and yet very effective way to test corn for seed in thus outlined by a Utah Agricultural publication:

One of the cheapest as well as most convenient and accurate methods of testing seed corn is known as the "Rag Doll" method.

For this test buy a few yards of sheeting of good quality and tear it into strips 8 inches wide and from 3 to 5 feet long. If it is planned to use the strips a number of times, hem the edges, as otherwise the ravelings sometimes disarrange the kernels in unrolling. Draw a line with a heavy pencil lengthwise down the middle of each cloth strip. Then draw cross lines at right angles to the first to divide the strip into squares about 3 inches wide. Number the squares.

Wet one of the strips thoroughly and stretch it out in front of the corn to be tested. Take 6 kernels from Ear No. 1 and place in square No. 1, take 6 kernels from Ear No. 2 and place in square No. 2, and so on.

When the cloth has been filled, begin at either end and roll the cloth up. If the cloth is well moistened the kernels will not push out of place. When the cloth has been rolled, tie a string around each end rather loosely or better still, use a rubber band. Number this roll No. 1. Then proceed with roll No. 2 in the same way. As many rolls may be used as necessary to contain the corn which one has to test. From 30 to 50 rolls can be tested in each roll, depending upon the length.

After the rolls have been filled and rolled up they should be placed in a bucket or tub of water where they should remain from 2 to 18 hours depending upon the preference of the operator. At the end of this time the water should be poured off and the bucket or tub turned upside down to drain the rolls. A common dry goods can be used for this purpose. A collection of small pieces of wood should be placed under the rolls and one edge of the roll or tub should be lifted from the floor to 1 inch in order to give ventilation. At the end of 5 days the kernels should be ready for examination.

Depending upon the arrangement of the ears, select, first either roll No. 1 or the last roll filled. This roll should be unrolled in front of the operator. Examine all kernels carefully. In cases in which



An Economic Problem

While the cost of nearly every necessity of life has been steadily increasing, the rates for telephone service have remained practically the same.

The buyer of foodstuffs, although paying much more, receives but sixteen ounces to the pound. On the other hand, the telephone user is constantly receiving more and better service and paying the same or even a less rate than he did a few years ago.

Gradually the value of telephone service has been increased by a constant increase in the number of telephones added to the system and by improvements and refinements in the telephone art.

Steadily, too, the cost of every piece of equipment and of all supplies, copper wire, iron wire, poles, hardware, etc., used in the business of furnishing service, has increased enormously.

In other words, our revenues have not increased in proportion to increased value of the service or in proportion to increased cost of furnishing the service.

This presents a serious problem in which the public and the Company are mutually interested.

THE MOUNTAIN STATES TELEPHONE AND TELEGRAPH CO.

ernels are not strong in germination
e ear should be eliminated for
ed.

SAFE FARMING.

Prof. J. C. Hogenson.

Program that means real diversifi-
cation and freedom from the risks of
one crop agriculture.

Seven objections to a one-crop sys-
tem of agriculture.

"First—Because the system de-
pends upon market and crop con-
ditions of the one-crop alone. Failure
of crop or failure of market alike
bring serious disaster.

"Second—Because it does not pro-
vide for the maintainance of soil fer-
tility.

"Third—Because it fails to provide
for a sufficient live stock-industry to
consume the waste products of the
farm and make its waste lands pro-
ductive.

"Fourth—Because it does not pro-
vide for a system of farm manage-
ment under which labor, teams and
tools may be used to the fullest
vantage.

"Fifth—Because it brings returns in
cash but once a year instead of turn-
ing the money over more than once
a year.

"Sixth—Because it does not produce
the necessary foods to supply the
people upon the farm and keep them
healthy and strength.

"Seventh—It limits knowledge,
grows citizenship, and does not
foster home building, but does en-
courage commercial farming."

The remedy of these evils is diver-
sification. Diversification, however,
means something else than a change
from growing grain to
growing something else. One
man, who believed that he was a
fool to diversification, planted 500
trees of tomatoes. In other instances
farmers turned from one crop to an-
other and had nothing else for sale
in the fall. This, of course, is not
diversification. The term is defined
as "an agricultural system through
which the living of the people upon
the farm is first produced and then a
number of products suited to the soil,
the climate, and the market con-
ditions of the country are judiciously
selected and made the main items of
profit through sale in the great mar-
kets of the world, always keeping in
mind the necessity for maintaining
the fertility of the soil."

This is practically the same thing
as "safe farming." The essentials for
attainment are stated as follows:

1—A home garden for every family
on a farm. From one-tenth of an acre
to one-fourth or one-half an acre, well
located, well tilled and tended as
carefully as any other crop on the
farm, is what we mean by a home
garden. It must be planted in rotation
as to have continuous crops, thus
providing something for the family
table as many days in the year as pos-
sible. To this should be added an
acre of potatoes, to be used as food
for the family. On the subject of
gardening, bulletins may be obtained
from our Agricultural College and
from the Department of Agriculture.

2—Produce enough wheat to last
the family with certainty, for one year,
with little excess for safety."

3—Produce sufficient oats and bar-
ley as food for a year, with certainty.

4—Produce the hay and forage
crops necessary to supply the live-
stock on the farm for one year, not
forgetting the legumes, which not only
produce hay but also enrich the soil.

5—Produce the necessary meat for
the family by increased attention to

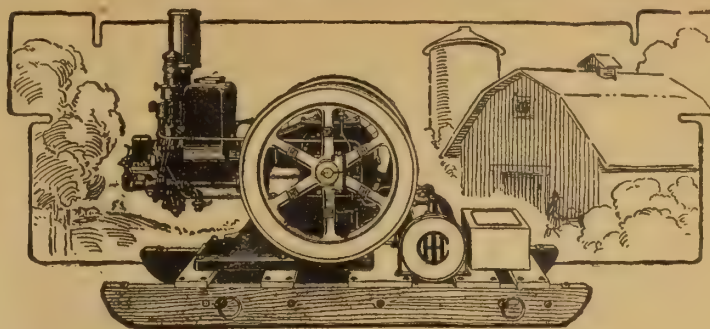
poultry and hogs. I say poultry and
hogs because they can be increased
most rapidly for meat production.
Then farmers should plan gradually
to increase and improve through
breeding, the cattle and other live-
stock, so as to consume the otherwise
waste products and make our unpro-
fitable or untillable lands productive.
Every family should have at least two
cows, so that one can be in milk all
the time. We should set some stand-
ard to which to work. A standard for
the small farmer would not be less
than two milch cows, not less
than two sows, and not less
than 50 and preferably 100 hens. All
of this stock should be well tended,
well fed, and properly bred.

"6—When the living has been pro-
vided grow the main money crop which
differs in different parts of the State
from potatoes, sugar beets, mangels,
to fruit, alfalfa, wheat and live-stock."

I cannot consider a farm yard as
complete without an extensive grape
arbor, which, in season, is hanging full
of grapes. A grape arbor festooned
with clusters of grapes is not only a
source of pleasure and profit, but is
ornamental to the home grounds. It
can be so arranged so as to be artis-
tically beautiful and at the same time
afford a cool and shady retreat for the
children to play in and where the
farmer himself with his wife may find
a place of respite secluded from the
extreme heat of the day. Don't forget
this in planning out the home grounds.

Remember an ungreased wagon runs
18 per cent harder than a wagon that
has been properly greased. This ap-
plies to all machinery, which means
a little more "axle grease" now and
then, and the oil can should never be
far from you.

More farm machinery rust out than
wear out.



Does Its Work for Little Money

WHEN buying an engine for any farm job
you can't beat the Mogul engine for
economy—no matter where you look or what
price you pay. A Mogul gives you steady power at
the lowest cost per day or per year of service—any
way you figure it. It works on the cheapest engine
fuel you can buy, common coal oil. It uses only
just enough fuel to carry the load. It starts and
runs on magneto—no batteries to buy or renew.
Its oiler takes care of every bearing, and never forgets. It
is as near automatic as an engine can be made and it handles
all kinds of engine work.

The Mogul is made to do its work for little money—
less than any cheap engine. Then, it will outlast two or
three cheap engines. If you want steady reliable power
at the lowest possible cost—and, of course, you do—buy
a Mogul engine in any size from 1 to 50-H. P. If you don't
know the local dealer who sells Mogul engines, write to us.
We'll tell you where to find him and we'll send you our en-
gine books.

International Harvester Company of America

(Incorporated)

SALT LAKE CITY

Champion Deering McCormick Milwaukee Osborne Plano



The Niagara Dusting Machine at work in an orchard.

This machine can also be used in the alfalfa field for the rapid application of
arsenate powder for weevil, and with tobacco dust for aphids. The Niagara
Way is the quickest way of applying insecticides and fungicides in orchard and
field. Write for the free book on dusting.

Niagara Sprayer Co.,

Middleport, N. Y.

F. A. Frazier, Pacific manager,

P. O. Box 372, Portland, Oregon.

To Buy**FARMS****To Sell**

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

50 acres of the finest farm and garden land in the west. Located at Elberta, Utah. Will make a very suitable place for the man that wants a small farm at a reasonable price. Well adapted to raising any of the farm products, garden truck, alfalfa and beets. Within a short distance of two good mining camps affording a fine market for garden vegetables. On railroad giving excellent shipping facilities. Good schools adjacent. Prior water right at \$1.00 per acre if used. Look at this before you make a selection. Write or see

W. C. ALBERTSON
604 Dooly Bldg.
Salt Lake City, Utah.

FREE FARM LANDS

The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years. Our Committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah.

FOR SALE

640 acres with 168 acres wheat, 50 acres alfalfa, well, fence, 6 horses, harnesses, implements, etc.

800 acres, 320 pasture, 235 acres in wheat and some horses, etc. Will sell part or all. Price and terms reasonable. For further information, write

N. E. MILLER
439 So. Main, Logan, Utah.

GOOD LAND FOR SALE

I have two twenty-acre tracts, two forty-acre tracts and a ninety-acre tract of land on the west side of Salt Lake Valley, under the new canals, for sale this spring. Prices range from \$80 to \$125 per acre with water. Easy terms for purchasers. Last year I sold more than 2,000 acres of this land to residents of Salt Lake County. Please write or leave inquiries with the Utah Farmer, Salt Lake City, or Lehi office. Francis W. Kirkham.

FOR SALE

40 acres of beet, hay and vegetable farm one mile from sugar factory. Good climate, soil—sand loam and black clay, no rock nor gravel in soil. Sub-irrigation system, plenty of water for same. Good natural drainage. Produces from 14 to 25 tons beets per acre. Alfalfa 3 to 5 tons. On graded state road, one-half mile from railroad station on main line. Part cash, good terms on balance. Address,

JAMES A. ANDERSON
Trenton, Utah, R. D. 1 Box 22.

FOR SALE CHEAP.—My home in Charleston, Utah, and Eighty Acres of Land one mile out. For further particulars write C. E. Thacker, Charleston, Utah.

\$3,750.00 takes a 50 acre farm at Elberta, Utah. Fine Soil, very suitable for growing Alfalfa, Fruit, Beets, Grain, Garden Truck or any farm products. Good water right at a very reasonable rate. Adjoining to good schools and is located on railroad. Suitable terms can be arranged. This is a real buy for the man that wants a small farm at a good price.

W. C. ALBERTSON
604 Dooly Bldg.
Salt Lake City, Utah.

**IDAHO RANCHES
AT LOW PRICES**

If you are interested in good dividend paying properties, located in one of the west's best farm districts. It will pay you to consider either of these properties or others listed with us.

320 acres, all under cultivation excepting 65 acres which is in pasture; only two miles from city. Has two houses, three granaries, garage and other buildings. Located near school and fully equipped. Price, including 19 horses and colts, 5 cattle, and chickens, is \$14,000—part cash and balance on terms.

160 acres, hay land; one mile from town, small house, running water through property. Price \$3,200.

320 acres, about 250 acres of which is tillable, house, barn and other buildings, good open range and timber. Price \$6,000.

160 acre farm, two miles from city. 90 acres in cultivation, all fenced. Price \$25.00 per acre on reasonable terms.

Federal Land Company

Ogden

Utah

For Sale

440 acres excellent dry land, located in the north end of Cedar Valley. Mountain joins land on west. Good cattle range, Cedar Fort Creek runs through center. 170 acres Turkey Red wheat planted, 100 acres stubbles. Will make price right and terms easy. Will sell part or all. Enquire

A. E. HAWKINS

Cedar Valley, Utah.

FOR SALE

In Boxelder County, 50 miles from Brigham City, 960 acres of land, 800 under cultivation, 400 in fall wheat, about 40 alfalfa, 12 head horses, harnesses, machinery, buildings, well and equipment. Price and terms reasonable. For particulars write

MILLER BROS. FARM CO.
394 S. M., Logan, Utah.

50 acres at Elberta, Utah, very fertile, well adapted for raising beets, alfalfa, fruit, garden truck and all farm products. Prior water right at \$1.00 per acre if used. Can be purchased for \$75.00 per acre if taken quick. A good buy for the man that wants a small farm at a reasonable price. Write or see

W. C. ALBERTSON
604 Dooly Bldg.
Salt Lake City, Utah.

Farm Loans

CURRENT RATES
FAVORABLE TERMS
LIBERAL AMOUNTS
ALWAYS IN FUNDS

MILLER & VIELE

803-807 Kearns Building
SALT LAKE CITY

Attention Farmers

You can rent or purchase land and water at Elberta, Utah County, Utah. Deep, rich and fertile soil, adapted to grain, beets, potatoes and forage crops. Plowing can be done now.

Come at once to Elberta, where 4,000 acres and water is waiting farmers.

Write Edward T. Jones, Provo, or M. B. Whitney, Elberta, Utah.

When you answer the advertisements in this paper tell them you saw it in the Utah Farmer.

Farmers' Opportunity

Industrious farmers wanted to lease or buy land. Good location, rich soil, fenced and plowed, abundance of water, seed furnished, splendid climate. Address: 707 Kearns Building, Salt Lake City, Utah.

Insure Your Live Stock

against death from any cause

THE HARTFORD WAY

low rates no assessments

HEBER J. GRANT & CO.

22 Main Street

Salt Lake City, Utah

RELIABLE FARM BARGAINS

\$450 will buy a first-class acre garden tract on the 5-cent car line, immediately adjoining the city the south. This land can be for a small payment down and long time on the balance. If you are living in the city and can get out in the suburban home will appeal to you.

We have in southern Idaho land which we can sell in small tracts of 40, 80 or 160 acres. The soil in this tract is first-class and there are 4 feet of water per acre, the maintenance on the water being low. It is located on the Oregon Short Line railroad and the highway passes through the tract. The price of this land ranges from \$60 to \$100 per acre and can be sold for 10 per cent of purchase price and ten years on the balance at 6 per cent interest on deferred payments. If you are interested in purchasing a farm, we will gladly mail you a folder giving full details about this property upon request.

We are owners of 700 acres of land in Cache valley which we can sell to be some of the best soil in the district. We have purchased under conditions that we can sell at a very low price and on very easy payments—10 per cent at time of purchase and ten years on the balance at 7 per cent interest. If you are looking for a farm we would advise you to investigate this property before purchasing elsewhere.

We have recently come into possession of several of the choicest farms in the Bear River valley. We are now offering these farms at a price of from \$135 to \$200 per acre, depending upon the location and the improvements. This land is all in a high state of cultivation and is all under irrigation from the Bear River canal. It can be had for 10 per cent down payment and 10 years on the balance at 7 per cent interest.

During conference come to our office let us help you get the farm you are looking for. Our service is always at your command.

We make a specialty of exchanging city homes and city property for farms.

KIMBALL & RICHARDS
"Land Merchants,"

56-58 Main Street,
Salt Lake City, Utah.

Phone—Wasatch 963.
FARM AND RANCH DEPARTMENT

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

Baby Chicks

om the best proven egg laying
ock S. C. White Leghorns and R.
Reds. Get our Circular.

GUHAMA
BATES & SONS
POULTRY and FRUIT FARM
PROVO, UTAH. R.F.D. NO. 1.

BABY CHICKS

We are now booking orders for
ring Delivery in White Leghorns,
rown Leghorns, R. I. Reds, Barred
cks and Black Minorcas. Anconas
o.

THE ORLAND HATCHERY
Orland, Glenn Co., California.

BABY CHICKS

C. W. Leghorn chicks from real pro-
ble egg producers. Our chicks are
orous and will thrive because our
ck eggs are healthy and because no pul-
s' eggs are used for hatching.
ur hens lay all winter.
end for booklet.

MOUND VIEW FARM
Brigham, Utah.
D. No. 2

BEST 4 EGGS 4 BEAUTY
t. C. Rhode Island Reds, White Wy-
ates, S. C. Black Minorcas and White
ghorns.
bred for Eggs and standard require-
nts. Better start right. Eggs guar-
anteed to hatch or replaced free of
arge. Write for descriptive folder and
ices.

E. C. BLANPIED
Milford, Utah
Ex 29

Baby Chicks

We offer baby chicks from the
ry best utility stock. Farm
ised stock that you can depend
on. White Leghorns, per 100
-\$9.00; per 50-\$4.75. Barred
ymouth Rocks, per 100-\$15.00;
r 50-\$7.75. Rhode Island
ds, per 100-\$15.00; per 50-
7.75. White Plymouth Rocks,
r 100-\$15.00; per 50-\$7.50.

VOGELER SEED COMPANY
Salt Lake City, Utah.

FOR SALE
ngle Comb White Leghorn
atching Eggs from bred to lay
ock. Our thirteenth year.
ices right.

MODEL POULTRY FARM
Crning California

ASHER'S HATCHERY IS NOW
king orders for baby chicks—White
horn our Speciality. We guarantee
e arrival and full count. Strong,
orous chicks from the finest flocks of
e range stock in the country. Write
1917 price list and instructions on
e of baby chicks. Lashers Hatchery,
aluma, California.

WANTED to hear from owner of good
m for sale. State cash price and de-
sption. D. F. Bush, Minneapolis, Minn.

BABY CHICKS

From healthy, vigorous, prolific stock—
Reds, Minorcas, Barred Rock, White
Leghorn, Brown Leghorn, Buff Leghorn.
Now booking orders for spring delivery.
Prices consistent with quality.

ARCADY PLACE HENNERY
A. T. Smurthwalte, Manager.
Wellsville, Utah.

BABY CHICKS

All kinds, good stuff. Eggs for
setting from Prize Winning R. I.
Reds, \$1.50 to \$4.00. All kinds chick-
ens handled. Agent for De Laval Sep-
arators. **OGDEN FEED CO.**
J. H. Shafer, Prop.

Ogden Utah

FOR SALE

S. C. Brown Leghorn eggs for hatching
from bred to lay strain. Free range
stock. \$1.00 for 15; \$5.00 for 100 de-
livered. Fertility guaranteed.—D. Strat-
ton R. D. 1, Box 207, Provo, Utah.

EXTRA QUALITY White Leghorn
chicks 10c each. Carefully linebred
from MacFarlane, Young, Cyphers
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stock. Eggs \$1.50 per 15, \$2.50 per
30, \$5 per 100, \$50 per 1000. Acres
of free range connected with our
breeding pens, 20,000 feet under
roof. Only Jubilee incubators used,
disinfected every hatch. Don't save
2c per chick in buying and lose a
dollar pullet in raising; get the best,
and succeed. **NEWTON POULTRY**
FARM, Dept. 8, Los Gatos, Cal.
Catalogue free.

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Eggs for Hatching. R. C. Brown
Leghorn and Black Langshan.
\$1.50 for 15; \$7.00 for 100. Fer-
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J. H. STUART
Wellsville, Utah. Box 73

200-290-EGG, EARLY MATURING, WIN-
TER LAYING Leghorns, Reds, Rocks
Wyandottes, Anconas. \$3.00-\$10.00 yearly
profit per hen. Breeders, Eggs, Chicks.
Hundred every week; many repeat orders.
Questions welcomed. Guarantee you pro-
fit with feed high. J. Beeson, Pasadena,
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Baby Chix, hatched on the ranch,
from Wood's White Leghorns that are
carefully selected by the Hogan sys-
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Breeding stock, females \$1.50 each,
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Standard Bred Hambletonian Stallion,
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Fair 1912. Will sell or exchange for
other stock.

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Satisfaction or Your Money
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Breeder of Big Type Polands
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BULLS FOR SALE

From A R O dams which we are offer-
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First class Registered Holsteins
Bulls, ranging in age from two
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A pure bred Duroc boar, a son of
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Boars chuck full of Grand
Champion Breeding. Bred the
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Fair Winners. We have a great
lot of top spring Boars and are
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Every Boar guaranteed to
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The West's Best Durocs.

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White Flint Dry Land Seed Corn.
Well bred for five years. Gave a fifty
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Poland China Hogs for sale. Both Sexes
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Ephraim Utah

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One Black, coming three
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Four Black, coming two
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All registered in the
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America Stud Book.

All strictly first-class
Stallions.

Will be sold at a very
reasonable price consider-
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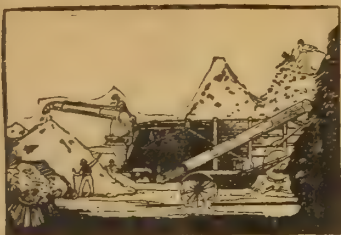
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ALFALFA SEED FOR SALE

Best Grade.....14c
Good Grade.....12 1/2c
Good Grade Seed somewhat dark.....10c
Less than full sacks 1 1/2c lb. higher. All prices f. o. b. Oasis or Lynndale, Utah. These three grades all run high germination test.

Cash must accompany the order.

A. A. HINCKLEY
Hinckley Utah

TAKING CARE OF HARNESS

There are two essential parts to the harness; the fit and the wear. Unless the harness fits well there is no pleasure in its use for either man or horse. As far as the fit is concerned, the collar is the essential part, for if the collar is the correct size and type the rest of the harness can be adjusted within reasonable limits. About the most satisfactory manner of treating the collar proposition is to have a separate collar for every regular work horse on the farm. Have these collars fitted properly in the beginning and they will soon become broken into the neck of the horse and never give any trouble. Where a collar is used first on one horse and then on another it is never quite satisfactory, for the difference in conformation of the shoulders between different horses is generally just enough to change the shape of the collar, so that when it is changed from one beast to another trouble in the shape of sore shoulders is likely to result.

The wear of the harness depends on three things; the money put into it in the first place, the judgment of the buyer in selecting it, and finally the care given it while in use. One cannot expect to get a good harness for nothing, particularly in these days of high priced leather goods, and when you come right down to a point of service and time saved, a good harness is worth the price. On a farm, in particular, there is little use for a lot of heavy metal work and brass trimmings; the money that is sometimes put in there had better go into purchasing a little higher quality harness. Brass trimmings may look all right on a city street, but they are out of place on the average farm and make unnecessary weight for the horse to carry. Here are a few practical helps for keeping harness in good condition and adding to its service:

Keep the stable well cleaned out, since the ammonia gases rising from manure are injurious to leather.

Keep harness used only at rare times in a closet or other protected place. Harness in daily use should be kept in a place as free from dust or dampness as possible.

When harness is removed from a horse, wipe it off. This is especially important if the harness is sweaty. Sweat injures the leather.

Remove the sweat and dirt with a damp sponge; then wipe dry with a cloth or, if it is a fine harness, with a chamols.

If you have been out in a rain, do not hang the wet harness up, as it will become hard and brittle. Rub with warm soapsuds, dry and then oil the harness.

Neatsfoot oil is good for harness, and should there be any tendency toward a reddish color as a result of washing, the original black may be restored by adding a little lampblack and kerosene to the oil.

Finally, protect the harness by keeping it in good repair. A harness repair outfit may be purchased for a few dollars, including stitching awl, rivet set, rivets, pliers, and clamp for holding leather. A repair made in time may avert an accident, or prevent a broken harness during a busy season.

Husband: I told Bohrsun that we might drop in on them tonight.
Wife: Oh, fudge! You know I don't want to visit those people, and I can't see why you do.

Husband: I don't. I told him that so that we can stay at home tonight without fear of having them drop in on us.

Don't Waste the "Golden Nuggets"!

Make every seed-piece count, yet make sure of a full stand. This boy will help you do 100% potato planting, with no doubles and no misses. He will save you 1 to 2 bushels per acre—some say a barrel. He earns his way many times over. You can't afford to do without him. Use the seed-saving



IRON AGE Potato Planter

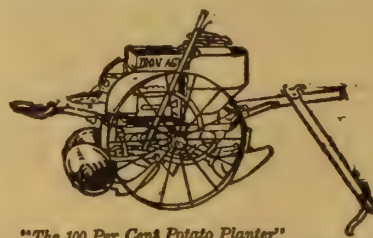
It plants as fast as the team can walk, spaces the seed evenly and at uniform depth. Has no pickers—nothing to cut or bruise the seed. Spreads the fertilizer and thoroughly mixes it with the soil so that it can not injure the seed. Can be had in two styles with or without fertilizer attachments and with choice of furrow openers.

Write today for booklet fully describing this 100% Potato Planter. We also make a full line of potato spraying, cultivating and garden tools.

Bateman Mfg. Co., Box 835, Grenloch, N. J.

Sold by

UTAH IMPLEMENT-VEHICLE CO.,
Salt Lake City, Utah.



"The 100 Per Cent Potato Planter"

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CULTI-PACKER

TRADE MARK REG.



Makes a Fine, Firm Seed Bed

Chas. B. Wing, noted seed and alfalfa expert says, "Three tools—the plow, spring tooth harrow and the Culti-Packer are absolutely all that are needed to prepare a perfect seed bed."

The two rows of semi-steel wheels on the Culti-Packer cut and crush every lump to a depth of several inches. The back wheels come half way between the front, so no clods are missed.

The shape of the wheels allows them to cut down through the top soil and firm out all air spaces left by the turning of furrows. At the same time they leave the surface loose and well mulched so the seed bed does not dry out quickly.

Culti-Pack your seed beds this year—get the tool from your John Deere dealer.

FREE

"SOIL SENSE"

48 pages—100 field photographs on soils, seed beds, cultivation, etc.

Ask your dealer for it—or write direct.

THE DUNHAM CO., 309-337 FIRST ST.,
BEREA, OHIO



APR 24 1917

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 37.

LEHI AND SALT LAKE CITY, UTAH

APRIL 14, 1917

Our Country Needs Your Help

President Wilson has made a personal appeal to the farmers of the nation, making it a patriotic duty to increase our food supply.

Secretary of Agriculture David Houston is holding meetings in different parts of the United States, urging and planning for an increase of food production.

President E. G. Peterson of the U. A.

Prof. J. T. Caine III, director of extension work, and Dr. F. S. Harris of the Utah Experiment Station attended a meeting at Berkeley, California, at which were present the government officials of all Western states, and the purpose of the meeting was to discuss and plan to increase our food supply.

On Tuesday a meeting was held at the Agricultural College, which was attended by representatives from nearly every part of the state. They discussed the question of increasing the supply of food. It seemed to be the general opinion of those who took part in the meeting that one of the most serious questions confronting the farmer is the increased production of food products was the scarcity of farm labor. Because of this condition, they passed a resolution, asking the Agricultural College, the University of Utah and all colleges and church schools, high schools, etc., to dismiss their schools on April 17, and where this was found impracticable, that they close their schools one week later in order that the boys and girls assist in putting in the crops.

The extremely late spring has caused an unusual condition for farmers. They must prepare their farms in about one-half the usual time. We must not only produce our own food supply, but we must help feed the allies as well. There is a big shortage in the wheat production of Argentine. The wheat crops of Kansas and Nebraska are reported as being very materially damaged by winter frosts. The report given out by the government for April 1st shows 22.8 per cent below average for wheat, taking the last years as the basis.

We urge the necessity of planting every foot of ground to non-perishable food products, such as corn, beans, wheat, potatoes, onions, sugar beets, etc. With all the nations at war the food problem is one of the most difficult to solve. Locally one of the most serious problems with which we will have to deal is the question of obtaining good seeds.

engaged in the production of food should not be encouraged to enlist, but rather help by producing a larger food supply.

At the St. Louis meeting with Secretary Houston, they recommended a supervision of the nation's food supply and asked congress to immediately pass laws, guaranteeing minimum pay for farm products to the farmer

needed to meet the present situation. If Utah and other states do not produce a large surplus, it means that many people will suffer for the want of food. One of the largest packers in the United States has suggested that "either by law or voluntarily people will be obliged to stop eating so much meat during the summer months especially if they expect a sufficient supply for next fall and winter."

There will be perfected within the next few days a very strong state-wide organization, which will outline a plan so that the best results will be obtained.

The Utah Farmer will give to our readers the very best help that can be obtained in order to increase our production. We plan to have experts and practical farmers give helpful suggestions as to how we can get the greatest returns from our farms. The first thing to do is to prepare the seed bed in the best way possible. Do not spare a little time in putting the ground in such shape so that it will produce the largest crop possible. The selection of seed is a very important one and where it can be done the best seed should be planted in order to get the maximum results.

Representatives of the schools were called together by State Superintendent Gowans and Pres. John A. Widtsoe and passed a resolution pledging their support and help in this great movement. Wherever the boys or girls can be used on the farms they will be graduated and released from school to return home or to help in the work of increased food production.

If you want help send word to J. Edward Taylor, Logan, Utah, stating how many farm hands you can use. If you want seed, send your request at once to him.

If you have any more seed corn, potatoes, wheat, beans or other farm products let Mr. Taylor know, so the committee can get the two together, the one who wants the seed and the one who has it for sale.



Serve your country by making it possible to thresh two bushels of wheat this year where we threshed only one last year.

The Agricultural College has sent out several hundred letters, asking for a report on available seeds. Any farmer who has more wheat, potato or other kind of seed than what he will need for his own use should report to the county farm agent, and if the county is not organized where you live, report direct to the Agricultural College at Logan, so that those who have the land but do not have the seed may be able to obtain it.

The government has gone so far as to suggest that men who are actively

and a minimum wage to farm laborers.

The Utah State Farm Bureau are doing all they can to help mobilize the food supply. A letter will be found in another part of the paper that was recently sent out by State President D. D. McKay.

There is a strong sentiment throughout the United States favoring government supervision and control of food products and food prices. This may be looked upon as a radical suggestion, but we are facing a great emergency and radical remedies are

PRECAUTIONS IN SECURING A FULL STAND OF BEETS

By The Utah-Idaho Sugar Company.

The spring preparation of the beet ground, whether having been fall plowed, spring plowed, or the spring tooth-ing method, should be carefully harrowed and floated and harrowed again to make a fine mellow seed bed always figuring that the plowing has been well done as to depth, and not allowing the plow to take more furrow than it can cut and cover nicely. Don't work the ground too early when it is cold, wet and dead like, or too late when the moisture has escaped, but have your horses and implements in readiness when the soil has sufficient warmth to work up nicely, then crowd the operations with vigor.

Planting.

The drillmen should be exceedingly careful to see that all the bolts are kept tight on the drill, and especially the one passing through the slot at the lower end of the boot, which regulates the press wheel. If this bolt becomes loose, in soft ground the drill will go too deep, and in hard ground the press wheels will not cover or press the seed. The drill should be carefully watched in order that it may be kept in first-class condition. The Farmer should at least be in his field when the drillman starts, to see that the work is being properly done to his satisfaction, because this work is so very important that it should receive the special attention of the farmer in connection with the drillman. The grower should give his particular attention to see that the rows are carried out to as near the end of the field as possible. We realize that during the twenty-six years we have been in the business, our farmers have made wonderful progress, particularly with regard to the making of their seed beds and the planting of their seed, but no doubt a few suggestions to the drillmen and farmers relative to this matter will be appreciated.

Depth of Planting.

Where the soils remain damp to the surface, on account of the water level being close, $\frac{3}{4}$ of an inch is deep enough. If seed is planted too deep on such lands, if the beets come at all, they will be very spindley. On up-lands, however, beets may be planted from one inch to one and one-half inches in depth, if the moisture is near enough to the surface, on such lands; to insure germination one inch will be better than one and one-half inches, because, where beets are planted deep especially in early planting and there comes a cold spell of weather before they are up, they are very likely to curl up and die under the surface, and this is almost sure to happen if there is a rain storm, after the beets are planted and before they are up, as the rain will likely form a crust on the soil. So special care should be taken to see that the beets are not planted too deep, because there have been more poor stands by too deep planting than by too shallow planting; however, neither should be indulged in. The condition of the soil and season should regulate the planting and every drillman when he goes on to a new field or a different field for the same grower should be careful to observe whether the land is hard and firm or soft, and then regulate his drill accordingly, taking sufficient time to do it, in order that the farmers will secure a good stand of beets, which is very important. On account of the fact that the securing of seed for all sugar factories in the United States has become quite serious, because of the war, we know

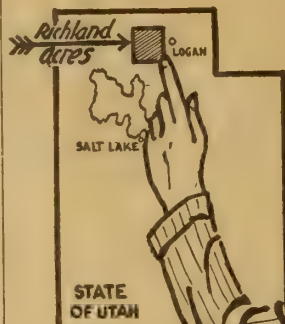


Figure this out

If You Want Land!

---The Richest Land in all the West!

20 Years in Which to Pay!

Figure It Out

Take pencil and paper—let's see EXACTLY what it will mean to you to secure a farm at Richland Acres; let's figure it out in dollars and cents—if you buy a farm on this wonderful tract of farm land two and a half miles west of Logan, Utah, on the floor of the fertile Cache Valley. Remember, you are on rich humus-laden, silt loam soil; it will raise fifteen and twenty tons of sugar beets to the acre. Remember, you are on land that is drained by tile and provided with the finest water right in the state of Utah, with irrigating water at 11 cents and 12 cents an acre. Remember, there are big towns two and three miles away; a railroad through the heart of the property; sugar factories and condensed milk factories near by; good roads, schools, churches, telephones, electric lights, rural free delivery and many other conveniences.

Low Prices--Easy Terms

Prices range from \$132 up to \$202 an acre. But you pay only from \$10 to \$20 down and then your annual payments per acre will be only \$10 to \$16 per year—less than farm rent! Now, let's see exactly what a farm at RICHLAND ACRES will

cost you each year—take Farm No. 6, containing 19.77 acres. Your cash payment on this farm will be \$20 per acre, or \$395.40 total cash payment. Your annual payment per acre will be \$13.25 per acre, or \$261.95 per year. If you want to pay out on this land at the end of the fifth year you can do so by paying \$142 per acre—\$2807.34 for the 19.77 acres.

Tile-Drained Beet Land

The land adjoining Farm No. 6 has produced an average of fifteen tons of beets to the acre. Suppose you put fifteen acres into beets the first year, with a yield of thirteen tons to the acre, and it costs \$40 per acre to produce these beets. The net profit per acre, with beets at \$7 per ton, will be \$51—THIS IS \$37.50 MORE THAN IS NECESSARY TO PAY YOUR ANNUAL PER ACRE DUES.

Land Pays for Itself

The second year the land will produce fifteen tons per acre, at a cost of \$35, which will mean a profit to you of \$70 per acre. Or, in other words, YOUR LAND WILL PAY FOR ITSELF AS YOU GO ALONG AND GIVE YOU A HANDSOME PROFIT EACH YEAR, BESIDES.

Where else can you find land like this. There will never be a failure at Richland Acres. We want good, level-headed farmers, who understand the possibilities of well-irrigated, fertile soil, who know how to work and are willing to work—men who can and will make a success of their farms at Richland Acres. If you delay too long there will be no farm for you at Richland Acres. An investigation will cost you nothing, nor will it obligate you in any way. Call on, write or telephone to any of the following agents for booklet and more information about Richland Acres.

ED. D. SMITH & SONS,
Exchange Place, Salt Lake.

H. E. SMOOT,
Provo, Utah.

THE REXBURG REAL ESTATE & ABSTRACT COMPANY,
REXBURG, IDAHO.

CARDON COMPANY
Logan, Utah.

J. H. WATKINS,
Brigham City, Utah.

Logan Land and Drainage Co.

A. F. CARDON, Manager, Logan, Utah.

that the farmers will agree with us that no seed should be wasted, and we hope our farmers and drillmen will co-operate in this matter; on the other hand we do not want our farmers to cut down their seed to the extent that their stand of beets would be jeopardized, when soil conditions demand a little more seed. This will

have to be left up to the drillman, as we have so many varied soil conditions, which have to be met.

Our farmers have already received a letter from Mr. Cutler, relative to the seed question, asking them where soil conditions would permit, to cut down to 12 pounds per acre, as we have had splendid stands of beets in

past years by planting that amount of seed, on soils there were in excellent condition for planting. However, where farmers have heavy clay soil and the condition of the same is such that they think they should plant 14 to 15 pounds per acre, if they do so instruct the drillman, he will plant accordingly.

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A YEAR.
FOREIGN
SUBSCRIPTION
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VOLUME XIII.

LEHI, UTAH, SATURDAY, APRIL 14, 1917

No. 37

Soil Preparation and Rotation of Crops

Mark Austin, General Agricultural Superintendent Utah-Idaho Sugar Co.

A great many of the farmers in our Western States have not yet established any definite system of rotation in crops, which is one of the most important things connected with farming, for the benefit of the farmer and the farm. Properly done, it increases the yield and enriches the soil. Alfalfa has been found one of the best fertilizing plants for the irrigated sections of the West. Very few farmers, however, have discovered the best method to apply to get the best results from alfalfa as fertilizer. Most farmers plow up the alfalfa stubble, plowing it once or twice before planting other crops. By this method the alfalfa grows to some extent and injures the growth of other crops, especially sugar beets, and only about 60 per cent to 70 per cent of the fertilizer is given to the soil, that could be returned to the soil if the following method was carried out.

Allow your alfalfa to grow by giving sufficient water to keep it in first class growing condition until time for planting late potatoes or corn. See that the land is nice and damp, and then plow under the green foliage, plowing about eight, nine or ten inches deep. Depth will depend upon the previous plowings. See that the plow cuts the right width of furrow so that all the soil is cut and thoroughly turned up side down. All the green alfalfa should be thoroughly covered and then follow with a land leveler or float so as to hold the moisture. If the work is properly done, the green alfalfa will decay and so will also the entire root system and the entire plant passes off into the soil to thoroughly enrich it, furnishing sufficient plant food to raise from three to four crops thereafter without any further fertilizer.

As soon as the plowing has been done and the soil prepared by narrowing sufficiently, it then should be planted at once to corn or potatoes, using a potato planter or shovel plow, making a little furrow about three to four inches deep to drop the potatoes into. If a shovel plow is used, run a leveler over them and cover up the sets. If corn is to be planted, it can be done with a corn planter or an ordinary garden hoe as the farmer may elect according to the size of his field.

This preparation will give a very large yield of potatoes or corn. I have seen as high as five to six hundred bushels of potatoes and from fifteen to twenty tons of corn for silage per acre. If the farmer is short of feed, he would naturally want the corn because he will get twice as much feed as he would from raising hay on the land, and more where the weevil is working on it. That is in the sections

(Continued on page 11)

Thousands of Dollars In Prizes For Farm Products

By Utah-Idaho Sugar Company.

To stimulate the increased production of sugar beets the Utah-Idaho Sugar Company offers the following prizes to be given in each factory unit, they have 14 factories a total of \$3,920.00.

To the man in each factory unit, that plants, harvests, and delivers the largest number of acres of sugar beets.....\$100.00

To the man in each factory unit, that plants, harvests and delivers the largest tonnage of sugar beets\$100.00

To the man in each factory unit, who has the best average tonnage per acre of sugar beets raised and delivered on 5 acres or more.....\$50.00

For the school boys in each factory unit, for the best crop of sugar beets on not less than one acre, provided 10 or more contestants enter, a first prize of \$15.00, 2nd prize \$10.00, third prize \$5.00.

By The Mormon Church.

The Mormon Church through its trustee and trust president, Joseph F. Smith, will give to any auxiliary organization or quorums of the priesthood prizes as follows.

First—For the best acre of Potatoes.....\$1,000.00

Second—For the second best acre of Potatoes \$500.00

Third—For the third best acre of Potatoes..\$250.00

First—For the best 5 acres of spring wheat\$1,000.00

Second—For the second best 5 acres of spring wheat\$500.00

Third—For the third best 5 acres of spring wheat\$250.00

All contestants must send in their report, stating they have entered, to the Presiding Bishops office, Salt Lake City, by May 15, 1917.

By The Amalgamated Sugar Company.

The Amalgamated Sugar Company will offer some very good cash prizes to the farmers in each of their factory districts, the details will be announced in our next issue.

The Best Crops to Grow For Silage

E. V. Ellington, U. S. Dairy Division.

The West has recently experienced a food shortage that is perhaps unprecedented in recent years. Unusual conditions, precipitated by world-wide war, coupled with an unusually long winter, have resulted in great losses to the live-stock industry. Farmers and stockmen were caught in a state of unpreparedness. They awoke to the fact that alfalfa hay, which ordinarily could be secured on the markets at from \$10 to \$15 a ton, was only available at the unheard of prices of \$35 to \$45 per ton. Likewise the price of cereals has reached new high levels. These conditions have brought to the attention of every one interested a sharp realization that strenuous methods will have to be adopted to increase and conserve the production of crops on all available lands, and it has also demonstrated to all that it will be necessary to reduce the cost of production of live-stock and live-stock products. The U. S. Department of Agriculture and land grant colleges and allied agricultural interests are now taking the lead in a nationwide campaign to accomplish these results. There was one class of farmers in Utah and surrounding states that did not experience such severe losses. These were the men who had built silos. In a recent article in the Utah Farmer, it was stated that when alfalfa hay was fed alone cows consumed 30 pounds per day. When the hay was supplemented by silage they consumed only ten pounds per day or a saving of 600 pounds per month which is a very sizable saving.

One progressive farmer-business man in the Cache Valley, who keeps accurate accounts on cost of production, states that the past season he built and filled his silo at a cost of \$500. By supplementing his hay with silage, he reports that he was able to save \$500, or the price of the silo filled, in a single season. Would it not be wise for all agencies interested in silo extension to plan a concerted effort? If 500 silos can be constructed in Utah this season, a long step will be taken in the conservation of food resources.

At this season of the year it is well to consider what crops to plant for silage—the crops which will give the maximum tonnage at the minimum cost. Corn is pre-eminently a silage crop. The solid succulent stems and broad leaves, when cut into short lengths, pack closely and form a solid mass which not only keeps well but furnishes a product that is much relished by stock, which consume it with little or no waste. Corn is also used because of its wide range of adaptability. It will also produce more

(Continued on page 10)

Dairying

DAIRY SUGGESTIONS.

How can a farmer obtain good dairy cows? Good dairy cows must either be bought or raised by the farmer. Good dairy cows, however, are not for sale cheaply or even at a reasonable price, nor is the supply big enough to satisfy the demand. Furthermore, there is danger that diseases instead of cows may be bought.

The most practical way, then the cheapest and the best, to get good cows is to raise them. Use the common stock as a foundation and grade up the herd by using a well-selected, well-bred, pure-bred, dairy sire of the breed you have. Through continued use of a pure-bred sire a great improvement in dairy production will most surely result.

If cows are well bred but improperly fed and poorly attended, good results are impossible. Feed the herd as individuals and not as a herd. This applies most directly to grain feeding. The dry cow need not receive the amount of grain that the highest producers in the herd are getting. Through proper distribution of the feed to the individuals the production of many herds could be easily increased.

Plan to imitate the conditions of early spring pasture. Winter feeding is then possible with good results in milk production. Pasture conditions

are ideal. Succulence, palatability, and a balanced ration are necessary for winter feeding. If silage or roots, alfalfa, barley, or oats are grown, a good ration for a 900 lb. cow producing 40 lbs. average milk would be 30 lbs. silage and 15 lbs. alfalfa hay, to which has been added one lb. barley or oats for every four lbs. milk produced. With roots, the same hay and grain amounts could be used except to replace silage with 15 lbs roots.

To feed economically keep records. Intelligent feeding requires milk records, and economical milk production requires feed records. Keep both. Can a man attend a boiler without a steam gauge? It is economy to increase coal if the boiler responds with sufficient steam, but the danger of using too much coal exists. With a cow it is profitable to increase the feed as long as she responds with sufficient milk. This the milk record sheet will tell us, but without it there is danger of overfeeding and "throwing the cow off feed."

The dairy farmer puts forth great efforts to obtain results. If these efforts are not properly directed, the results will not be obtained. Often a little brain work on the part of the dairy farmer will cut down the excessive amount of manual and muscular work.

A. C. BALTZER.

KNOW WHAT IT COSTS TO KEEP A COW?

Of Course You Think You Do, but
Chances Are You Don't. Find
Out.

We sometimes get the impression that the cost of keeping a horse or a cow is determined by the amount of feed consumed, plus the amount of labor expended, and possibly an interest charge. The government has published figures on the cost of raising, from birth, a two-year-old heifer which show that 65.6 per cent of the total cost was expended for feed, 12.9 per cent for labor, 5.9 per cent for interest, and 15.6 per cent for other charges, such as buildings, equipment, bedding, etc., or with a total expense of \$62.06. These items which might be called "other charges" amounted to \$9.72.

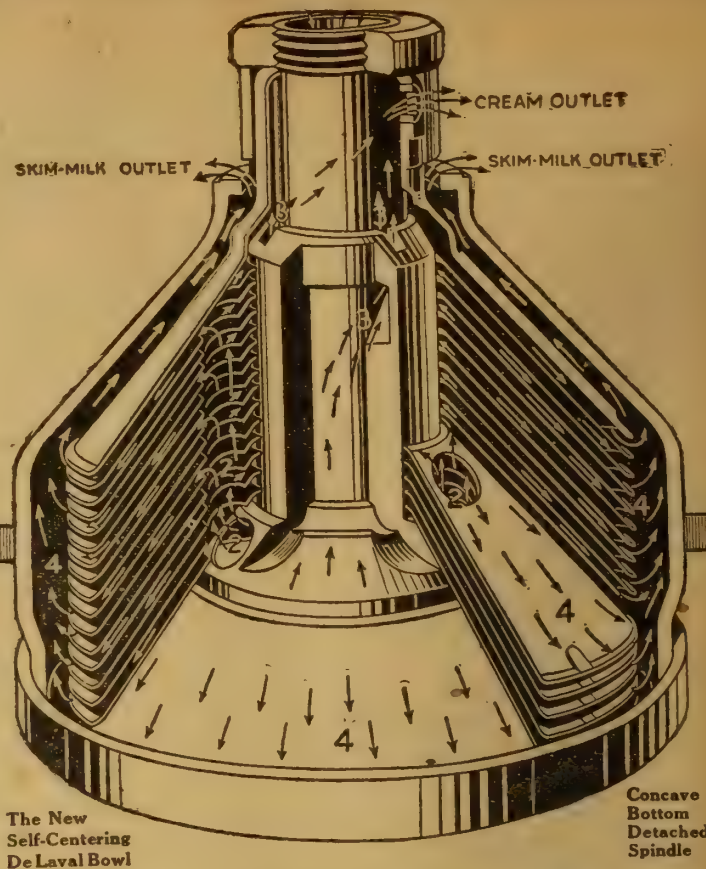
This emphasizes the need of caution in determining the cost of any single enterprise of the farm. Too frequently these "other charges" are omitted in reporting profits. About the surest way to avoid the possible error is to keep a complete set of accounts. Of course, there is some work attached to it but by adopting a simple direct entry method of bookkeeping it isn't such a bad job.

SKIM MILK CALVES.

If we are ready to admit that a cow's milk is too good for a cow's calf and that it is economically profitable to rob the future cow for the sake of the present gains, then it is quite necessary to know how to raise calves on separator milk or other artificial and unnatural foods.

The usual practice is to pour separator milk, sometimes cold, into a large trough, which is never cleaned, and allow the calves to drink until they are satisfied. This method means pot-bellied, runty calves that never make the growth that they should, even though they fortunately escape the ravages of indigestion.

Calves should not be given quite enough milk to satisfy their appetites. Each calf should be fed separately,



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carefully regulating the amount of milk by the size of the calf. The fat that has been removed by the separator may in a way be supplied by adding a handful of cornmeal, or flaxseed meal to each bucket of milk. After drinking the milk, the calf will be kept busy eating the meal instead of sucking another calf's ears. The milk should always be warm but never given to the calf directly from the separator, when it is frothy.

The milk buckets should be taken to the milkhouse or kitchen and lized at least once a day. Calves soon begin to eat a little hay grain, like ground oats, should after constitute part of the food.

If it pays to raise calves at all it pays to feed and care for them from day they are born. Farm sanitation is the all-important thing in the raising of live stock on the farm.

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son, ask our customers.



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SALT LAKE CITY

Important Factors In Dry-Farming

By J. W. Paxman, Specialist in Dry-Farming for the Utah Agricultural College.

Burning the Brush.

No less a variety of means is employed in the burning of the brush than in the grubbing of it. The grubbing of the brush is only part of the process in clearing the lands. The clearing is completed only when the brush is all gotten out of the way either by hauling it off the land or successfully burning it. And in either instance we should figure in getting rid of it completely or to the extent that the plowing can be done properly. Sometimes the plowing is done without grubbing or burning the brush. This is not recommended, as usually such brush has to be pulled by hand at the expenditure of considerable human energy and with unsatisfactory results. Attempts are made with varying success to burn the brush while it is standing, without grubbing or raking. Where the development work is being done gradually and the burning can be done a few months in advance of the plowing, and the brush is large enough and thick enough, it is profitable to use the elements for such work, which is often done by taking advantage of the heavy south winds on a hot summer day. Some farmers are wise enough to watch for such an occasion,

and by a use of the elements clear their brush lands at a cost of a few cents per acre. More should take advantage of this means, and thereby greatly reduce the cost of developing their lands. Then too, where the grubbing can be done one season ahead of the plowing, the burning of the grubbed brush could be accomplished with much less effort and expense by "hitching the blaze to the wind" on the hot July or August day.

When a considerable portion of the brush is left rooted after grubbing, it is better to "fork" part of the loose brush onto the "rooted" ones and let remain a few days to dry before burning. Where the grubbing is well done it is advisable sometimes to rake the brush into windrows before burning. The raking is also advisable after the burning, where, for any cause, a considerable amount of brush is scattered over the land. The thing to bear in mind is, that it is much easier and more profitable to operate the land with all the brush "cleared off" and "out of the way" than it is to have it to contend with during the plowing and every operation thereafter. The best we can do there are still enough roots and brush left to give us all the grief we care to have.

The Brush Rake.

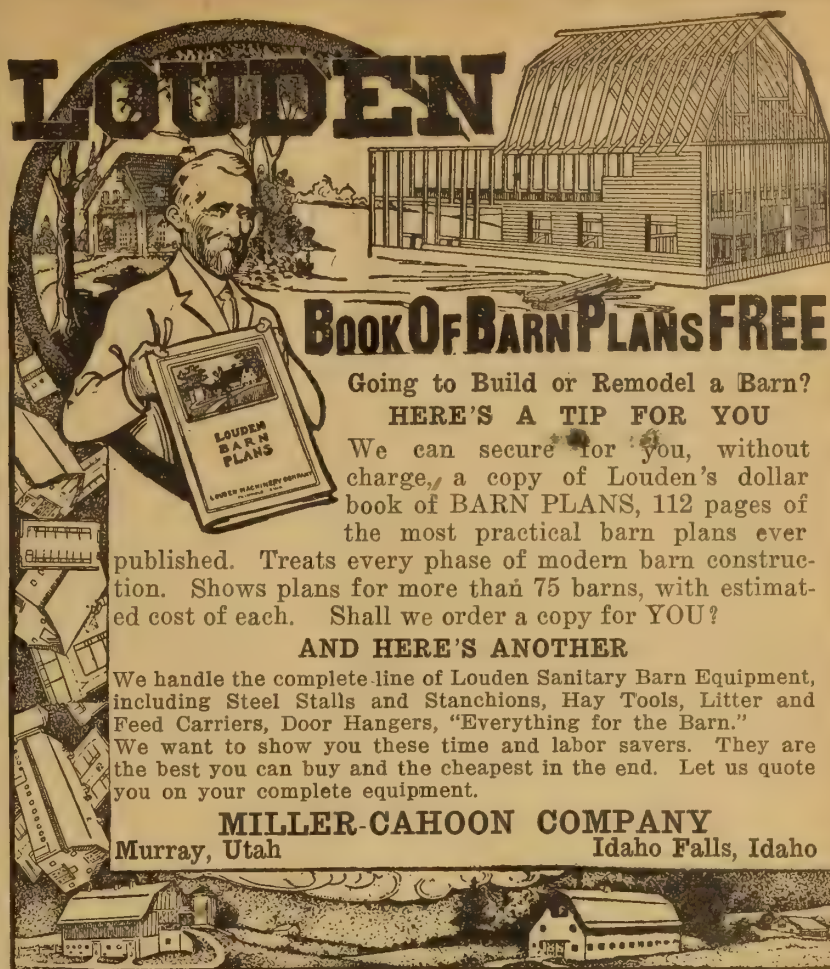
In the absence of the brush rake the spike tooth harrow has been made to do good service in gathering the loose brush on the surface as well as getting the roots out off the plowed ground.

Of late years, however, brush rakes have been put on the market and used with success by many of the farmers. Mr. Hurst has developed a practical rake to follow his grubber. The Emerson-Brantingham Co. have on the market, and sold by Miller-Cahoon Co., Murray, a very successful brush rake. It is 10 ft. wide, has 26 extra heavy teeth and a sheet plate on each wheel to prevent brush getting into spokes. Last year it sold for \$41.00 with doubletrees. In a section where a few hundred acres are to be developed, it would pay the neighboring farmers to co-operate and own such a rake.

A boy, two horses, with one of these selfdump rakes can go over about 20 acres a day on the grubbed land or plowed land and gather a lot of rubbish at a minimum cost. The results, I am sure, will give satisfaction and more than justify the outlay.

A Labor Saving and "Sure-Fire" Torch.

We are indebted to Mr. R. A. Thorley of Cedar City, for the production of a simple device as a help in burning the brush or any class of rubbish. A man with this torch can do the work of three or more men with brush torches on a fork. It consists of a piece of chandelier pipe $\frac{3}{4}$ or 1 inch and 6 to 8 feet long, with an airtight cap or plug (removable) on one end, and a piece of burlap or old rag rolled into a round wick 8 to 10 inches long and inserted 4 to 6 inches into the other end. The wick should fit into the pipe reasonably tight and from 3 to 4 inches remaining on the outside to feed the blaze. Remove the cap or plug, fill the pipe with kerosene (coal oil) and seal the end airtight with cap or plug. The wick becomes saturated with kerosene and feeds from the pipe the same as the wick of the lamp is fed, and will afford a good vigorous torch. A slight tap of this torch on the brush or rubbish will scatter the blazing kerosene and give the fire a good start. As the kerosene diminishes there is a



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vacuum formed in the pipe which will retard the flow of the oil. Lifting the torch above the head occasionally permits the taking in of air through the wick and thereby renewing the feed. It will be seen then that the feed of the torch is regulated by the vacuum, hence the necessity of an absolutely airtight plug in the opposite end. One gallon of oil will last about 6 to 8 hours with a $\frac{3}{4}$ inch pipe depending on the feed given the torch.

An iron gas pipe will answer as well as a brass chandelier pipe only it is much heavier and would tire a person quicker.

This torch is a wonder in that it

provides an instant combustion for ignition, which makes it possible to scatter fire over the brush and rubbish almost as rapidly as one cares to walk. Its as near a "sure-fire" as it is possible to get it and will prove a boon to those who use it.

—o—

A druggist lately received a hurried call from a small girl who desired to purchase some liniment and some cement.

"Liniment and cement?" repeated the pharmacist, puzzled by the unique order. "Going to use 'em at the same time?"

"Yes," promptly replied the youngster. "Ma she hit pa with a pitcher."



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Utah Farmer when writing the advertiser.

If you want any farm labor many of the young
men at High School and College are willing to
help you. Don't be afraid to ask. Write to
J. Edward Taylor, Logan Utah, care of Agricul-
tural College.

BIG MOVEMENT FOR GOOD ROADS.

Next Tuesday, April 17, the taxpayers of
Utah County will vote on the question of a
bond for the building of permanent roads in
that county. The amount is one of the
largest ever considered by any county for road
building in the State, being \$750,000.00.

It is a very progressive movement and will,
no doubt, be carried through. Years ago we
were very much against bonding but the senti-
ment has changed. We think very little today
about bonding to build school houses. Why not
do it for good roads, especially when it is
economy as the officials of Utah County claim it
to be?

Other counties will no doubt follow the lead
set by Utah County and it will result in a general
big movement for good roads.

FARM LOAN BANK WILL START SOON

We were asked by Dr. George Thomas, director
and treasurer of the federal farm loan bank at
Berkley, California, to tell all farm loan associ-
ations, if they do not get their new papers for
permanent organization within the next day or
two, they should write to the bank at Berkeley,
California, asking for them.

A new set of blanks have been made out. They
are somewhat different to the others and it will
be necessary for all associations to have the new

forms. If yours do not come by the 17th of
April, write Dr. Geo. Thomas.

Within the next thirty to forty days, the federal
bank will be loaning money, according to Dr.
Thomas.

We suggest that the farmers get together and
organize, so you can take advantage of these
farm loans. The money will be loaned at 5 per
cent, quite a difference from what most of our
farmers are now paying.

If you do not know the details of how to organize
we will gladly furnish them to you.

FOOD CROPS MUST BE INCREASED

The importance of an increased production of
food crops cannot be overestimated, and our
government and state officials are doing all they
can to help in this work.

According to a government report issued April
7th, Utah has the best prospects for a good har-
vest of any state in the Union. Possibly it is be-
cause of our local prosperity that we do not real-
ize the real condition that confronts the world
today.

Famine is a most awful thing and unless we do
our part many people will suffer. Now that we
have entered into the war, we must meet a press-
ing need because of the shortage of food in the
United States, and help the allied nations besides.
As expressed by President Wilson, the most press-
ing need of Europe is for food and money, and his
appeal to the farmers of America should be
answered with the greatest crop production pos-
sible and the most careful conservation and
economy with all of our foods.

Increased production of crops without increasing
our acreage can be done by planting only tested
seed of good variety. The use of all the manure
or other fertilizers possible and a strong united
fight against insect pest and crops diseases.

Increase the production of pork, beef, mutton,
poultry and dairy product by the better use of
your feeds in the way of balanced rations, etc.
Eliminate the star boarder and the non-producers.
Use every method possible to prevent animal
diseases, like hog cholera.

We do not want to appear as being extreme
in this matter but we do feel it a solemn duty to
present to our readers the real situation. The
crop reports for the world as gathered by the
Agricultural Institute of Rome shows a very great
shortage of wheat. Argentine Republic has less
than half a crop. Other reports might be given.
The United States has only a 63.4 prospect and
with all this shortage we must feed ourselves and
the European World. It can be done by the in-
tense cultivation of our present acreage and by
the planting of every idle foot of land. And also
by the elimination of all possible wastes and over-
coming the habit of eating more than is necessary.

Many well-to-do people have already put into
practice the most rigid economy in their homes.
Some of the largest meat packers in the world
suggest one or two meatless days each week. Such
men are very patriotic or else they sense the ser-
ious condition, or it may be both.

Here is the closing paragraph of a statement
made by Mr. Armour, head of the great meat pack-
ing company:

"The people of the United States are not yet
awake to the deadly seriousness of the situation
they are facing. Whether we went into the war
or not we were certain to feel its effects and to
suffer from them. Now that we are actually at
war we must rouse ourselves from the lethargy
into which we have fallen.

"Equally patriotic is the man who enlists in the
army or who, by making an extra effort, by under-
going extra exertion and even hardship, raises
more food to supply our people, our armies and
our allies.

"Unless the United States wishes to walk de-
liberately into a catastrophe the best brains of the
country, under government direction, must
immediately devise means of increasing and con-
serving our food supply."

The Utah Farmer has planned and will publish
from time to time the best ideas and suggestions
possible in order to carry out the plan of increased
production and economy in the use of foods and
forage crops. You can show your patriotism and
serve your country this year in producing a greater
food supply just as much as though you were in a
soldiers uniform and fighting at the front. How
long will the armies last if they do not have food
to eat?"

Utah will do her part in solving this great
problem.

REAL CO-OPERATION

There seems to be a spirit of real co-operation
growing in Utah. In many sections the farmers
have been in real need, and the call for assistance
has been answered by the big concerns of the
State.

The Utah-Idaho and Amalgamated Sugar Com-
panies have shipped in several hundred tons of
hay and grain to help the farmers in caring for
their live-stock. The condensed milk companies
have done similar work for the dairymen. The
bankers are showing more interest than ever be-
fore, and making loans in order to help their
customers provide for their stock, and buy imple-
ments. The Miller-Cahoon Company, implement
dealers, have proffered to loan a number of im-
plements to assist the farmers who are not able
to buy them in planting their crops. Others, no
doubt, are doing the same thing.

This kind of help is real co-operation, because,
in many instances, the individual farmer could not
have the things he needed. It could only be
done in a co-operative way.

RAISE MORE HOGS.

In the opinion of many live-stock men the price
of hogs will remain high, for the next two or
three years.

The price of hogs on the Chicago Markets was
as high as \$16.30 per hundred weight. This price
is very high and should be an inducement to
raise more hogs.

Early in the war Germany slaughtered her hog
in order that she would not have to feed the
grain needed for her armies. The shortage of
pork in the other countries is nearly as bad as
they will have to depend upon America for the
next few years, until their herds can be rebuilt.

We have ideal climate conditions for pork
production. With our wonderful alfalfa crop
and an abundance of grains, we can compete
with any place in the raising of hogs.

Possibly no other animal will multiply so quick-
ly and produce returns so soon as the hog.

Don't sell your brood sows, but help produce
more pork. We must feed ourselves and the
world and the hog is one of the best ways to do
it. We can not see how any one can make a
mistake in raising more hogs.

Our local markets, the markets of the United
States and the demand that Europe will give us
makes it look like the hog grower can demand
and get any reasonable price for his hogs.

With The Farm Bureaus

In this issue we give a report of a meeting of the State Farm Bureau directors held in Salt Lake City.

At a meeting of the Directors of the Utah State Farm Bureau held at the Union Stock Yards, Salt Lake, April 10, considerable business of importance was transacted. The directors were guests of Mr. Manderfield and the Stock Yards Company at luncheon and between meetings made a trip of inspection through the packing plant. The reports of the directors from the various counties indicate that there is a serious shortage of hay throughout the state. In some of the counties there is an insufficient supply of good seed of all kinds for planting. The partial failure of crops in the northern part of the state last year, was reported, greatly reduced the income of farmers in those sections in spite of the high prices prevailing at that time and as a consequence many farmers would be compelled to ask loans to secure seed for planting and to run them till harvest time. The Secretary reported that a large number of farmers had agreed to become co-operators in the livestock feeding experiment next winter. A larger number, however, indicated that they would rather not join in the experiment till midsummer when an estimate of the size of the crops can be made and a reasonable assurance had that they will have a surplus of force to feed live-stock. On reporting a membership the Secretary said that Weber County had reported and added for 106 more members than any other county on that date. Some of the other counties had made no report at all as yet.

One of the great big problems discussed was the effort to place under cultivation every possible acre of ground in this state and the best means of listing it so that it could be mobilized easily and quickly if occasion required. It was decided that an individual report card should be printed by each county bureau and sent to each farmer in the county asking that he report the numbers of acres, feed and surplus of food and forage crops. It was realized this campaign could not be carried out successfully without the hearty co-operation, self-sacrifice and sustained effort of the county officers and the individual farmers but the necessity for the effort is no less definite nor the call no less patriotic than the call to enlist the fighting forces of the nation and therefore as hearty response was expected.

The President was directed to ask each county bureau to list the number of tons of coal wanted by the members in their respective counties and report to him not later than June 1st. That bids might be asked for on the whole amount, and a substantial amount saved thereby. Details of the plan to be sent out at the earliest time. It was decided to secure a plate of uniform size and suitable material and design bearing the inscription "Member of the Utah State Farm Bureau" to be hung on the farm gate of each member of the bureau to be furnished to the individuals at cost. The county bureaus is already doing this.

The secretaries of the county bureaus are asked to become correspondents of the Utah Farmer in their county. Items of news is to be sent to that paper at Lehi.

Some of the county organizations are not making the most of the opportunity to help the farmer in their

locality. The fault seems to lie in the officers not knowing how to go about the work or in their lack of public spirit. There never has been a time when red blooded, live men had such an opportunity to serve their fellow farmers as at this time. Hay is short, seed scarce, farmers need credit. Information is easily obtainable and more easily disseminated and every agency is at the command of an organization such as a county bureau. All that is required is a live set of officers whose vision is broad enough to see past that selfishness that prompts some men to say "am I my brother's keeper, why should I leave my own work to look after public business," out into the big field of opportunity. A man who cannot serve the public with profit to himself as well as pleasure has not learned how to serve himself profitably or with pleasure. Surely the thought is impossible that able bodied Americans will permit their fellow farmers to suffer for lack of things because officers of an organization to which these same farmers have come for that kind of assistance are too shiftless or short sighted to render the service needed.

Salt Lake County—William C. Winder, Pres., Salt Lake City. F. W. Kirkham, V. P., Alva Hanson, Sec. Sandy.

Sevier County—R. D. Young, Pres., Richfield; J. Oscar Anderson, V. P., Sandy; H. J. Webb, County Agents, Salina; Wallace Sorenson, Sec., Richfield; W. W. Owen, County Agent, Richfield.

Millard County—Dean F. Peterson, Pres., Delta; Ed Anderson, V. P., Hinckley; A. M. Cornwall, Sec., Delta; J. T. Welch, County Agent, Hinckley.

Utah County—J. W. Allenman, Pres., Springville; R. W. Greer, Sec., Spanish Fork; C. W. Lindsay, County Agent, Provo.

Emery-Carbon County—H. A. Nielson, Pres., Ferron; T. R. Faddis, Sec., Castledale; Wallace Sullivan, County Agent, Price.

Box Elder County—John P. Holmgren, Pres., Bear River City; J. C. Wheelon, V. P., Garland; J. C. Wheatley, Sec., Brigham City; R. H. Stewart, County Agent Brigham City.

Weber County—D. D. McKay, Pres., Huntsville; J. R. Bues, V. P., Hooper; J. J. Andrews, Sec., Ogden; W. P. Thomas, County Agent Ogden.

Beaver County—W. W. Farrer, Pres., Will Roberts, V. P., H. A. Christiansen, County Agent. Beaver, Utah.

Cache County—Ephraim Burgeson, Pres., Bishop Rice, V. P., C. Z. Harris, Secretary, Richmond, Utah.

Iron County—John U. Webster, Pres., Wallace Lunt, V. P., David Sharp, Secretary, Cedar City, Utah; Alma Esplin, County Agent, Cedar City, Utah.

Morgan County—Joseph B. Waldron, Pres., George A. Seamon, V. P., Wallace R. Clark, Secretary, Morgan, Utah.

PRIZE WINNERS AT FAT STOCK SHOW

The two-year-old fat steer raised by the Agricultural College was the big prize winner at the Fat Stock Show held at the Salt Lake Union Stock Yards.

The steer weighed 1530 pounds and sold at twenty-six and one-half cents a pound, a price of \$418.70. He also won \$75.00 in prizes, a total of \$493.70. First and champion fat steer.

Second prize steer owned by John Seeley sold for 10 cent a pound.

First prize steer in class 2 owned by the Agricultural College, weighed 1330 pounds, sold for \$12.75 per cwt.

First prize and grand champion carload of fat steers owned by Clayton and Murnan sold for \$15.50 per cwt.

First prize and grand champion earload

900--HEREFORDS--900

I have at this time out of my herd of 900 head of registered Herefords, 300 head of registered bulls ready to go, in ages from eight months to three years, including both those of my own breeding, and bulls bought from the best herds of Iowa, Illinois Minn., and Missouri, all with big bone, lots of size and quality and splendid blood lines. I have an especially strong lot of yearlings and two year olds, among which are many great herd bull prospects. Whether you wish bulls for registered herd or for range use I can fill your wants.

If you want the best in range bulls or are looking for a high class herd bull, and want to buy them at a price that you can afford to pay come and see my cattle. I will sell in lots to suit purchasers.

Located on the main line of the Santa Fe and train schedules are convenient for seeing cattle between trains, also have direct transfer connection with the Fort Worth and Denver for Pueblo, and all lines west.

C. O. KEISER

Canyon

Texas

Seeds With a Lineage

are the Bumper Crop Producers. You get them from

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Seed and Nursery Specialists
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of Southern California

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THE SALT LAKE ROUTE

Three Good Trains, Daily.



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The Pacific Limited
The Los Angeles Limited

Excursion tickets, with long limits and diverse routes, on Sale daily.

For Attractive California Literature, Address

Wm. Warner, A. G. P. A. 10 East 3rd So. Salt Lake City, Utah.

Second prize carload steers, owned by Portland Feeder Co., sold for \$12.50 per cwt.

First prize carload fat steers owned by Alex Robb sold for \$11.75 per cwt.

First prize carload of fat steers in class two owned by Jonas Madsen sold for \$10.00 per cwt.

Second prize carload of fat steers in class two, owned by G. T. Olsen, sold for \$10.00 per cwt.

of fat hogs in class one, owned by F. A. Starkweather, sold for \$16.70 per cwt.

Second prize in same class fat hogs, owned by J. F. Edwards, sold for \$16.00 per hundred weight.

First prize and grand champions carload fat lambs, owned by F. A. Starkweather, sold for \$23.25 per cwt.

Second prize carload fat lambs, owned by Austin Brothers Association, sold for \$25.50 per cwt.

KNOW YOUR MACHINE

The present day automobile is a standardized and highly perfected mechanism. There is probably no class of machinery which is called upon for as hard and constant service with so little care and attention from the operator, but it is also true that there is no kind of machine where careful operation and intelligent care will pay such big returns in service and satisfaction. Nine-tenths of the repair bills could be saved by proper care and timely attention, making adjustments and doing overhauling in time to prevent trouble instead of neglecting it until it is too late and serious damage is done. Garage work is pretty expensive. Labor charges run from fifty cents to one dollar an hour, to say nothing of the cost for new parts, and the farmer should take care of his machine himself. He has run farm gas engines for many years and has a certain amount of knowledge of the gas engine principle, but an automobile is a different proposition and how many of us know enough about automobile design and construction to be able to give our machine the expert care that is so desirable? Almost anyone can run a car, as far as starting, stopping and steering it goes, but that is not all there is to motoring. Machines are becoming more complicated every year, especially in their electric equipment. There is a world of difference between the farm engine with its simple equipment of a few dry batteries and ignitor and the modern automobile with its generator, storage battery, circuit breaker, distributor, and starting and lighting system, where one little short circuit or broken wire may mean a dead battery, no lights and a stalled engine. In the cities there are many service stations where one can have his battery tested and inspected and the whole system checked over and cleaned and adjusted as often as necessary, but for the independent farmer a thorough knowledge of electricity and electrical equipment is well worth having.

Every gasoline engine has a carburetor of some kind. In the ordinary farm engine, it takes the form of a simple mixing valve with one gasoline valve to control the supply of fuel, and by adjusting this for a few seconds, while the engine is at work, anybody of average intelligence can get pretty good results. The automobile carburetor is a delicate and sensitive device with a great many complicated parts and as many as four different adjustments. They are not easy to adjust. As evidence of this, notice how many machines are missing fire as they go by and how few are getting the mileage that they are supposed to. It takes a mighty fine adjustment to get the power out of the small motors in use now, especially with the low grade gasoline we are burning, and the high price of fuel makes it distinctly worth while to get every ounce of power and every mile of running possible out of our gallon.

Bearings too rarely get the attention they deserve, few people can grind a valve properly or even know how to time their engine to get the most efficiency out of it.

An automobile represents a big investment for anybody. It will pay for itself in service and satisfaction if it is kept in perfect order. Otherwise it will not.

What may be said on this subject with regard to automobiles applies with far greater force to tractors. Here, the service demanded is not

What Feature Do You Want In Your Car?

MOST cars are sold on one or two points which the buyer insists must be on the car he selects.

Are your roads at times deep in sticky mud or rolling sand? Then you want **POWER**. You want to be able to go over the hills on "high," or to plow through the deep stuff without overheating your engine.



The Dixie Flyer Will.

Then when roads are good, you are pretty apt to be like the fellow who owns a spanking good mare. You will want to "let her out" on the smooth, straight stretch. Will forty-five miles an hour satisfy you?

The Dixie Flyer is easily good for that—and then some.

On crowded city streets, you want a car actively responsive to your slightest touch, one that can make a quick stop, slow down, dash ahead—the time observing traffic regulation.

The Dixie Flyer will throttle down to two miles on "high," and get away first when the semaphore turns.

Construction, comfort, performance—these features you will find in the Dixie Flyer. You will discover, too, that it embodies a larger service value and carefully chosen features which you will not find duplicated except in cars costing considerably more.

A demonstration will prove it. See the Dixie Flyer dealer in your city.

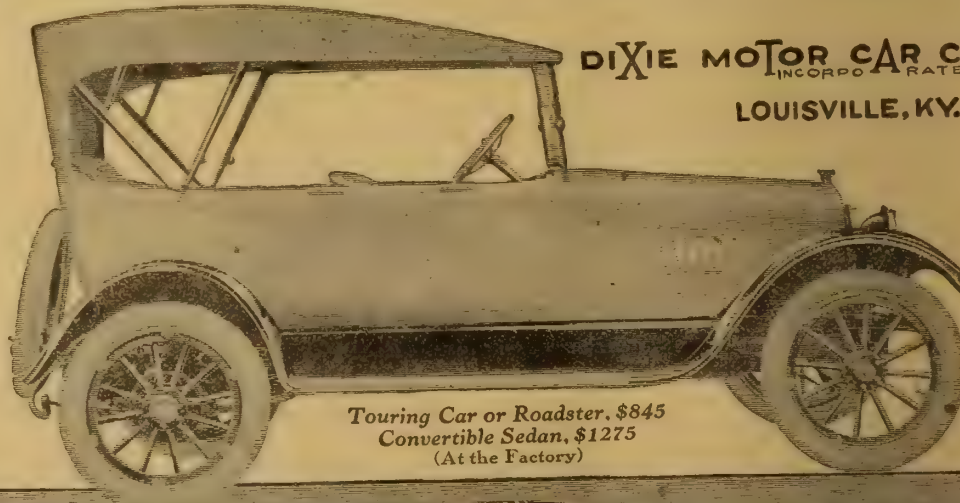
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DIXIE MOTOR CAR COMPANY
INCORPORATED
LOUISVILLE, KY.

Touring Car or Roadster, \$845
Convertible Sedan, \$1275
(At the Factory)



merely pleasure, but the machine is bought to do work, and unless it is kept in condition to do this work and do it economically and continuously, it is a failure. Modern well built machines have done wonders in the hands of experts but remember that the operator is more important than the machine. Whether yours is a automobile or tractor learn to know it thoroughly and take care of it accordingly.

HOME

WASTE NO FOOD.

Food Is Wasted:

(a) When we eat more food than our bodies need for growth and repair and to supply energy for our work. Over-eating tends to poor health and fat instead of brawn, makes us sluggish and indolent instead of energetic and resourceful. Eat enough and no more. Eat for physical and mental efficiency.

(b) When food is burned or spoiled in cooking. Improperly prepared or poorly seasoned food will be left on the table and probably wasted. Buy food wisely and then prepare it carefully.

(c) When too much food is prepared for a meal. Unserved portions are apt to be thrown into the garbage pail or allowed to spoil. Many housekeepers do not know how to use left-over foods to make appetizing dishes.

(d) When too much food is served at a meal. Uneaten portions are left on the plate and later thrown into the garbage pail. Learn to know the needs of your family and serve each no more than you think he will want.

(e) When anything edible is allowed to go to the garbage pail or allowed to spoil for lack of proper handling.

(f) When food is handled carelessly. Buy clean food, keep it clean until used, and be neat in all details of cooking and serving. This lessens waste and is a valuable health measure as well.

FOOD WASTE OF ABOUT 700 MILLION DOLLARS

"For partial immediate relief, every individual and community should consider earnestly the matter of food conservation and the limitation of waste. As a nation we seem to have a disdain of economizing. In many homes there is a strong feeling that it is 'only decent' to provide more food than will be eaten and that it is de-meaning to reckon closely. The ex-perts of the department of agriculture report to me that the dietary studies made by them point to an annual food waste of about \$700,000,000. Of course, the waste in families of very limited means is slight, but in the families of moderate and ample means the waste is considerable. Even if the estimate were reduced by half, the waste would still be enormous.

"The food waste in the household, the expert assert, results in large measure from bad preparation and bad cooking, from improper care and handling and, in well-to-do families, from serving an undue number of courses and an over-abundant supply and failing to save and utilize the food not consumed. As an instance of im-proper handling, it is discovered that in the preparation of potatoes 20 per cent of the edible portion in many cases is discarded."—Secretary of Ag-riculture, March 3, 1917.

FEED YOUR OWN FAMILY FIRST.

Don't feed high-priced human food to hogs or chickens.

Don't send valuable food to the in-cinerator or the fertilizer heap.

Don't pour into the sewer nourish-ing food in the shape of milk, skim milk, sweet or sour, soup, gravy, or melted fat, or water in which cereals or vegetables have been cooked.

Keep good food out of your garbage pail and kitchen sink.

Demonstrate thrift in your home.

Make saving, rather than spending, your social standard.

TODAY

Begin this day with clear purpose, strong resolve, and supreme faith. Concentrate upon essentials. Put your high ideals into actual deeds—live your largest and noblest life right where you are—today. Do your work well, and remember that your best re-ward for work well done will be great-er work and a larger sphere of use-fulness. Keep your mind upon a high level of constructive thought, realize the priceless value of time and op-portunity, and determine to make this day count towards real and perman-ent achievement.—Exchange.

You may think you're handy with tools, but give you a whole chest full and you can't begin to accomplish the sort of jobs that your wife does with a pair of shears and a hairpin.

The meanest man on record is said to live in Shrewsbury, Mass. He sold his son-in-law one-half a cow, and then refused to divide the milk, maintaining that he sold only the front half. The

buyer was also required to provide the feed the cow consumed, and com-pelled to carry water to her three times a day. Recently, the cow hook-ed the old man, and now he is suing his son-in-law for damages."

Good farming—what is it? Is it not good planning, good thinking, good doing and good living all round? Working is not all. Anybody can work, but really good farming has the high-est kind of standard. Strike high.

The Genuine FAIRBANKS Scale - 1000 lb. Size

Large Platform—Wide Wheels

When you weigh on a FAIRBANKS Scale you don't "guess it's right"—you know. Most scales are correct when new, but a FAIR-BANKS stays correct, because it has

500 Lb. Size, \$12.50 Both Prices F. O. B. Chicago

Steel to Steel Bearings and Arrow-tip Beam

Go to Your Local Dealer—see the scale and you'll buy it. A reputable dealer selling a reputable scale cer-tainly is a strong combination. If you don't know the local Fairbanks-Morse dealer, write us.

FAIRBANKS, MORSE & CO., Chicago

"If it's weighed on a FAIRBANKS there's no argument"



"HIPRESS" with the RED LINE 'round the top

Better Footwear for Farmers

Every "Hipress" Brown Boot or Shoe is Just ONE SOLID PIECE of tough, gristly rubber—actually the same kind of rub-ber that has made Goodrich Automobile tires known all over the world as the strongest, longest wearing tires ever made. That means wear—more of it in one pair of "Hipress" than in two and even three pairs of any old style black boots you ever wore.

And you can see that there isn't a chance for a "Hipress" One Piece Molded Boot or Shoe to crack, peel or come apart. It simply can't leak. It gives so much more service, and so much more comfort, that after you have worn your first pair you will always ask your dealer for the Brown Boots and Shoes With the "Red Line 'Round the Top."

Made only by The B. F. Goodrich Rubber Co., Akron, Ohio

Makers of the Celebrated Goodrich Automobile Tires —"Best in the Long Run"



THE BEST CROPS TO GROW FOR SILAGE

(Continued from page 3)

food material to the acre than any other crop used for silage.

It has been proven in many sections of Utah and Idaho that corn can be grown to sufficient maturity to insure a very good quality of silage. Records have been obtained of yields as high as 22 tons per acre, and yields of 12 to 15 tons per acre are common. In Cache, Salt Lake, and other valleys with like conditions, the Flint varieties are grown because of early maturity. The white Flint variety is quite successfully grown. In those sections which have a longer growing season the Dent varieties may be grown. A mistake is often made by farmers who are growing corn for the first time in importing seed from the Corn Belt of the Middle West. Failure usually accompanies this practice, due to the fact that the corn has not been acclimated to the Intermountain growing season. It is well to either purchase a northern bred corn or, better yet, secure seed from farmers who have grown corn to sufficient maturity in your immediate vicinity. The Utah Agricultural College is conducting some experimental work with corn varieties and will be able to give suggestions from their experience.

In those sections where corn fully matures many farmers and experimenters claim that best results can be secured by allowing approximately one square foot of ground for each corn plant, or planting the corn in rows 3 to 4 feet apart and 6 to 8 inches apart in the row. By this method the stalks will mature good ears. It is to be noted that the higher the percentage of grain to stalk the richer the silage is in feeding value.

In some sections where corn does not mature so readily it has been found advisable to plant thicker. Professor Haecker of Minnesota is advocating the following method: The corn is planted with a drill closing all holes

but the two holes at both ends and in the middle. This insures a double row of corn every three feet. The stalks grow thin and produce nubbins. Professor Haecker claims that by this method not only can more feed per acre be secured, but also that ton for ton the silage made from this corn shows as much digestible matter as silage from matured corn. This plan is still in an experimental stage.

Corn should preferably be cut for silage when the kernels are past the milk stage and are glazed and dented, and when the lower leaves are turning brown. At the New York Experiment Station, it was found that corn in the silk stage contained 90 per cent more dry matter than when in the tasseled stage; 30 per cent more in the milk stage than in the silked stage; and 55 per cent more in the glazed stage than in the milk stage.

If the corn should happen to be frosted, it should be cut at once and put in the silo before it has had time to dry out; otherwise, the leaves may be lost and considerable water would have to be added to allow proper packing.

At this time of the year the essential points to be observed are careful selection of the seed, a well prepared seed bed, and efficient cultivation.

While corn is the universal silage crop and the one which is being advocated as best adapted to Utah conditions, there are other crops that are being grown and may be used. One reason why corn is suggested is the fact that it supplements leguminous hays, such as alfalfa and clover, and tends to balance the ration. By using well-cured alfalfa hay and a good quality of corn silage, one secures as near a balanced ration for the average cow as it is possible to secure with two roughages, and this fact is quite essential in compiling the ration.

However, when corn will not yield over 7 or 8 tons per acre, under some conditions cereals or legumes may be used for silage to advantage. Almost any green crop can be successfully made into silage if sufficient care is taken in tramping to force out the air from the material to eliminate spoilage. Legumes, such as alfalfa and clover, have been used for silage with fair results. Ordinarily the legumes are much more valuable when cured and used as hay, and the only occasion when it would be practical to put them in the silo is when the hay has been damaged, and would not make first class hay. In certain sections of Idaho this plan has been followed, and the silage fed with good results during the summer to supplement pastures. Silage made from legumes has a rather disagreeable odor and care must be taken in feeding it in order to avoid tainting the milk.

Where corn yields less than eight tons, some very creditable results have been secured by using peas and oats for silage. The University of Idaho is conducting a series of silage experiments in communities where the tonnage of corn is too low. They are using mixtures of Canadian field peas and oats; wheat and vetch; and wheat alone. The best results thus far have been secured with peas and oats. This crop was cut as soon as it left the dough stage. Where it is well tramped and water added, very little spoilage results, and the silage is relished by the cattle.

When you answer advertisements, mention the Utah Farmer.

High Prices Will Continue during next year.

It will be to your interest to produce the biggest crops possible, both in field and garden. Our catalogue tells all about Vogeler's Purity Seeds.

SEND FOR A FREE COPY

Vogeler Seed Co.

SALT LAKE CITY, UTAH

By The Governor of The State of Utah

A Proclamation.

WHEREAS, the United States is now engaged in a war with a powerful enemy; and,

WHEREAS, in the prosecution of this war to a successful determination it is necessary for all of the people of the United States to dedicate their lives, their energies and their means, to the cause of their country; and,

WHEREAS, it is imperative that the people of the State of Utah take immediate steps to give effective aid to the nation in this crisis through the mobilization of its resources; and

WHEREAS, the state can co-operate best with a federal government and serve the country in the most patriotic way through the formation of appropriate organizations to direct the the energies and industries of the people of the state along lines that will render the greatest amount of service to the government.

NOW, THEREFORE, I, SIMON BAMBERGER, Governor of the State of Utah, do hereby call upon the city and county governments of the various cities and counties of the state to call at an early date mass meetings of the citizens of the respective cities and counties of this state to take steps toward the organization of the resources of the communities; to formulate plans for the co-operation with other agencies for increasing and conserving the supply of food stuffs and other resources so vital to the life of the nation; to select delegates to attend a meeting at the state capitol, Salt Lake City, on April 21, 1917, called by the county chairman of the Utah



HOLSTEIN CATTLE
Purebred Registered
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Four successful years in the field have conclusively proven the many advantages of these features as well as the absolute dependability of the

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The Original High Wheel Tractor

The all purpose farm power unit. Imitate but not equalled. For accurate, practical information on Parrett Farming, address

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HEAVEN AND HELL

Swedenborg's great work on the life after death, 400 pages, only 15 cents postpaid. Pastor Landenberger, Windsor Place, St. Louis, Mo.

EGGS

Are your hens laying a liberal number of eggs? If they are not doing well, try feeding them—

MOREGG POULTRY FOOD

and you'll note an improvement. This food stimulates sluggish organs and keeps all hens in good condition. An economical food for all chickens.

Ogden Packing & Provision Co.
Ogden Utah

agricultural college, acting in co-operation with the United States department of Agriculture to stimulate interest in increasing the productive acreage of the State; to assist the governor and the military authorities in recruiting to full war strength the various arms of the military and naval forces of the nation, and to perfect organizations to assist the constituted authorities in all emergencies that may arise during the period of the war.

IN TESTIMONY WHEREOF, I have hereunto set my hand and caused to be affixed the Great Seal of the State of Utah.

Done at Salt Lake City, the Capitol, this 11th day of April, A. D. 1917.

SIMON BAMBERGER,
Governor.

SOIL PREPARATION AND ROTATION OF CROPS

(Continued from page 3)

of the country where the soil and climate is favorable for the growing of corn.

For three years thereafter this land may be followed with sugar beets and raise from fifteen to twenty-five tons per acre, without any more manure. The tonnage will depend upon the soil, the season and the farmer. In some favored sections that have long seasons for the growing of the crops, many farmers by this method have averaged from twenty to thirty tons per acre.

I have seen this method tried in a number of our Western States for years, and I am sure it is one of the easiest, simplest and cheapest ways of fertilizing our soils and increasing our tonnage and cleaning our soils from weeds that can be adopted. It will increase the yield of beets over the ordinary methods of farming, a total of about twenty tons per acre during the three years. At seven dollars per ton for beets it is \$140.00, which is a pretty good price for hay per ton, saying nothing about increasing the potato and corn crop from thirty to forty per cent, provided you have a ton of alfalfa when you plow it under. Of course the more the better because the more you plow under the more you give to the soil. Our soils are very short of humus and the green alfalfa furnishes it.

I plowed under a crop of green alfalfa in Colorado on thirteen acres of land seventeen years ago this spring and the year following, I got a fraction over thirty tons of beets per acre with a good sugar content, and the land yielded twenty-five tons the following year and a fraction over twenty the next year, without any further fertilizer of any kind during the three years.

Our forefathers, especially in Europe, learned the value of a green fertilizer and they have given the soil a green crop of clover plowed in about every five years, which has assisted in keeping up the soil fertility during the hundreds of years they have been farmed.

As most farmers have some acreage of alfalfa, and in view of the fact that it will increase the feed supply where corn can be grown, they should prepare as much land with this method as they can, consistently, and thus get into a proper system of rotation of crops.

This work will be followed up a little later.

YOUR SILO

whether it is 100 feet high or 30 feet—can be filled with entire satisfaction with the

BLIZZARD

Ensilage Cutters

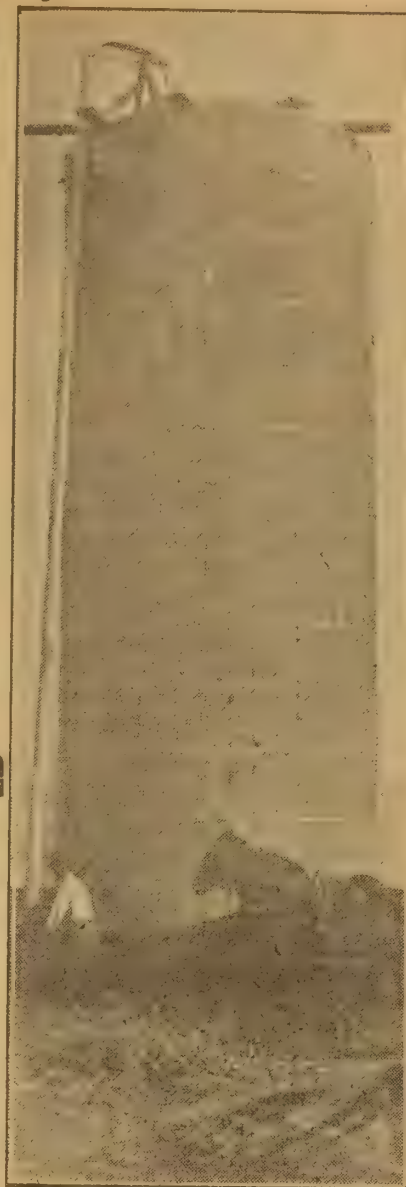
Filling a 35 foot silo with a L-9 cutter and a 5 H. P. Gasoline Engine.

Inter-Mountain Concrete Co.

Distributors for
State of Utah

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Ogden, Utah.

1018 Newhouse Building
Salt Lake City, Utah.



THE MOWER
BRANDED



Veribesh
TRADE MARK

's but one tool of this quality line for
essencing farm work.

STREVELL-PATERSON HDW. CO.
Salt Lake City, Utah.

S-P4

Make Your Shoes Waterproof

Protect your shoes from the dampness of spring weather—make them last twice as long, by using—

DUCK-BACK Shoe Oil

A natural preservative of leather. You'll get real comfort from your shoes when treated with "Duck-Back"—Makes them soft and pliable.

Utah Oil Refining Co.
Refiners
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Farmers' Opportunity

Industrious farmers wanted to lease or buy land. Good location, rich soil, fenced and plowed, abundance of water, seed furnished, splendid climate. Address: 707 Kearns Building, Salt Lake City, Utah.

SEEDS

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Send Today For Our Big
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Vogeler Seed Co.

Salt Lake City, Utah.

Insure Your Live Stock

against death from any cause

THE HARTFORD WAY

low rates no assessments

HEBER J. GRANT & CO.

22 Main Street

Salt Lake City, Utah



The Giant Of The Dairy

Grade up with a Jersey Bull!

He is half the herd, and the breed determines half the profits. Breed him to your grade cows and bring the herd average near the Jersey average—489 pounds of butter fat per year. Your calves will be beauties. They'll mature quickly into gentle, hardy, vigorous and persistent milkers, long-lived and adapted to any climate. Let us tell you more about them. Send for our book, "The Story of The Jersey." It's free and it's a dandy.

Write for it now.

The American Jersey Cattle Club
387 West 23rd Street - New York City

KENDALL'S



SPAVIN TREATMENT

Known for 40 Years as Kendall's Spavin Cure

A New Name But the Same Old Reliable Remedy

FARMERS and horsemen everywhere will be glad to know that this change is in the name only—that there is no change whatever in the famous old-time formula that has rendered such remarkable service in horse ailments—Bone Spavin, Ringbone, Splint, Curb, Sprains and Lameness—by the counter-irritant method.

Whether you get Kendall's under the old label or the new, the quality and efficiency is the same old reliable—with a 40-year-old reputation.

Get it of your druggist—\$1.00 per bottle—six for \$5.00—and ask for book "Treatise on the Horse"—or write

DR. B. J. KENDALL CO.
Enosburg Falls, Vt.

ALFALFA SEED FOR SALE

Best Grade.....14c
Good Grade.....12 1/2c
Good Grade Seed somewhat dark.....10c
Less than full sacks 1/2c lb. higher. All prices f. o. b. Oasis or Lynndale, Utah. These three grades all run high germination test.

Cash must accompany the order.

A. A. HINCKLEY
Hinckley Utah

Now is the time to subscribe for the Farmer.

SCALE OF WEIGHT FOR AGE IN STANDARD BREEDS OF LIVE-STOCK

The size and weight attained by live-stock at maturity are of great pecuniary importance to breeders. It is admitted by all that "a good, big animal is to be preferred to a good, little one." The factors promoting such differences are feed and heredity. The force with which feed operates in determining size is greatest during the growing period of the animal while heredity or breed is always present in the same degree. The upper limit of size is greater for well-bred stock than for individuals of indiscriminate breeding or ancestry.

The following table, compiled by Wm. Hislop, Experiment Station Washington, gives the approximate weights of the principal breeds of the live-stock at stated ages from one year to four years:

Breed of Draft Horses	Weight of Stallions in Pounds				Height of Stallions in Hands			
	One Year	Two Years	Three Years	Four Years	One Year	Two Years	Three Years	Four Years
Percheron	1100	1500	1760	2000	14.2	15.2	16.1	16.3
Belgian	1075	1480	1725	1950	13.3	14.3	15.2	16.1
Shire	1080	1490	1715	1975	14.0	15.0	15.3	16.2
Clydesdale	1050	1425	1700	1900	14.2	15.3	16.1	16.3

The weights specified should be reached if the animals in question are to equal modern standards of growth and development.

*Mares will follow the same approximate scale of increase, although the final weights will be from 100 to 200 pounds less.

WEIGHTS OF BULLS AND COWS IN POUNDS.

Breed of Cattle	Sex	One Year	Two Years	Three Years	Four Years and over
Shorthorn	B	925	1400	1725	2000
	C	825	1300	1625	1725
Herford	B	900	1350	1700	2000
	C	800	1275	1625	1700
Aberdeen Angus	B	850	1225	1625	1950
	C	700	1180	1525	1625
Galloway	B	800	1175	1525	1800
	C	675	1050	1350	1500

WEIGHTS OF BOARS AND SOWS IN POUNDS

Breeds of Swine	Sex	Six Months	One Year	Two Years and over
Poland China	B	165	340	600
	S	155	320	500
Berkshire	B	165	330	575
	S	155	310	490
Duroc-Jersey	B	170	335	600
	S	160	315	510
Chester-White	B	150	325	525
	S	150	300	450

WEIGHTS OF RAMS AND EWES IN POUNDS

Breeds of Sheep	Sex	Six Months	One Year	Two Years and over
Shropshire	R	80	160	220
	E	75	130	160
Hampshire	R	90	175	250
	E	80	140	190
Southdown	R	60	120	175
	E	55	100	135
Lincoln	R	96	180	250
	E	85	150	200
Rambouillet	R	75	130	185
	E	70	125	150

There will be exceptions to the weights as stated, nevertheless such a scale of weight-increase is conservative and compatible to efficiency of production. In all cases it is presumed that the animals have been well fed from birth, and that no serious set-backs have been encountered.

PRACTICAL VALUE OF SCALES.

There should be scales on every farm. By the use of the spring balance scales for weighing the milk we can best determine the producing power of our cows. With the larger household scales, preferably a platform scales of about 250 pounds capacity, the housewife can weigh the butter,

meat lard, etc., can check up the weight of various groceries bought and can easily determine the value of all farm products used by the family. The farmer is a producer and many of his products are sold by weight, yet nine times out of ten, he is ignorant of their weight at times of selling. The products are weighed on the buyer's scales and he takes their weight without question. This practice seems wrong. When we buy, the seller has the scales and we must take his weight and when we sell the buyer does the weighing also. It may be necessary to weigh on the buyer's scales at time of selling but the farmer should at least know the weight of his products.

We would like to consider all scales correct and all buyers honest but experience prevents us. With scales at hand we can be sure of the correct weight and if the buyer's scales show too great a difference, we will un-

doubtedly find it to our interest to change our buyers. Hence, scales will help to detect the dishonest as well as honest man. They will tell how much the stock is increasing in weight and how to feed accordingly. It gives an advantage over the live stock buyer, who buys by guess although he generally guesses low enough to protect himself; and their use assure you more fair treatment from all buyers when they learn you have your own scales and know what you are doing.—W. F. Kennedy.

Bad temper is its own punishment, but that does not appease its victim.

Do Not Put Up With Power That Will "Pass"—You Want It To "Pull"

Wasteful extravagance goes hand in hand with inefficient farm power apparatus. Soil scratched with light plowing that reduces production, crops lost with poor threshing that wastes the yield, soon eat up the saving made in the purchase of a cheap and light farm engine. The farm engine should be a good one, capable of doing work that will bring returns in proportion to its cost. No better engines can be found than those that bear the Nichols & Shepard name as members of the

Red River Special Line

In steam tractors there are five sizes and fifteen variants, 13-40 to 25-85 h. p., burning any kind of fuel, wood, coal or straw. In Oil-Gas Tractors two sizes are built, 25-50 to 35-70 h. p., developing full power on kerosene—nothing that a farm engine can do is too much for either kind.

Your own neighbor probably owns a steam or a gas engine of our make. Let him tell you what it can do, and then you might write for a little farm paper that will give you the opinion of others that you know at home. A catalog that is worth reading carefully will be sent you with the paper. A postal request to the nearest branch house will bring you both.

Nichols & Shepard Co.
In Continuous Business Since 1845

Builders Exclusively of Red River Special Tractors, Wind Stackers, Feeders, Steam Traction Engines and Oil-Gas Tractors

Battle Creek Michigan

Don't Waste the "Golden Nuggets"!

Make every seed-piece count, yet make sure of a full stand. This boy will help you do 100% potato planting, with no doubts and no misses. He will save you 1 to 2 bushels per acre—some say a barrel. He earns his way many times over. You can't afford to do without him. Use the seed-saving



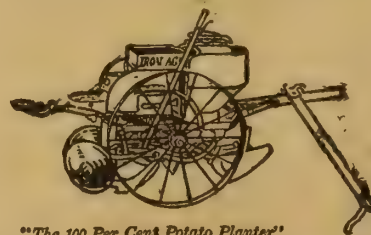
IRON AGE Potato Planter

It plants as fast as the team can walk, spaces the seed evenly and at uniform depth. Has no pickers—nothing to cut or bruise the seed. Spreads the fertilizer and thoroughly mixes it with the soil so that it can not injure the seed. Can be had in two styles with or without fertilizer attachments and with choice of furrow openers.

Write today for booklet fully describing this 100% Potato Planter. We also make a full line of potato spraying, cultivating and garden tools.

Bateman Mfg. Co., Box 835, Grenloch, N. J.
Sold by

UTAH IMPLEMENT-VEHICLE CO.,
Salt Lake City, Utah.



"The 100 Per Cent Potato Planter"

Here and There On The Farm

QUESTION AND ANSWER.

Snowville, Utah.

Utah Farmer:

I would like to know which is the better plan to sow alfalfa with a nurse crop of oats, or wait until the oats are harvested and then plant the alfalfa in the stubble?

Very respectfully your,

Henry Howes.

Answered by Dr. F. S. Harris.

A good stand of alfalfa can usually be secured in Utah by either planting it alone, or with a nurse crop, such as oats. The advantage of the nurse crop is that almost a year is gained, because the young alfalfa can be developed while the nurse is growing and a good stand is secured the first year.

I believe it would be better to plant the alfalfa right with the oat crop rather than to sow it on the stubble later. There are better chances of getting a stand when planted in the middle of the summer, when the land is likely to dry out very rapidly.

—O—

SHEEP STAND AT TOP IN PROFIT ON INVESTMENT

A. M. Paterson.

Sheep will return a greater profit for each dollar invested than any other class of live stock. For this reason farmers should give more attention to the sheep industry.

None of the disadvantages, the most important of which are dogs, parasites, and disease, should discourage the flockmaster. Proper care and management will control and largely eliminate these troubles. The flock that has to rustle for itself is the one that is hit the hardest by pests. With a little feed and attention, the sheep will be in a more healthy condition and return enough more profit to pay for the extra feed and attention.

Sheep produce two cash crops a year—wool in the spring and lambs in the fall. They can be grown and maintained upon a greater percentage of roughage and a smaller percentage of grain than any other class of live stock. They will clean up the weeds from the farm and convert other rough feeds into a marketable product.

As a source of fresh meat which is wholesome in character and flavor, a flock of sheep is the best. This fresh meat is the most healthful class of meat because fewer sheep are condemned than any other class of live stock.

LOCATION OF POULTRY YARDS

Wm. Olsen.

It is important, more important than any people will allow, to have the poultry yards well located.

A gentle slope toward the south, or south and east makes an ideal location for poultry houses and runs. Where, however, the ideal location cannot be had, and the houses and runs must be on level ground, good soil drainage must be provided. This can be effected by laying tile drains, or covering the yards with sand or gravel.

Unless the poultry yards and runs are well drained, they will soon become foul and unsanitary. Yards situated on sloping grounds are usually well drained, and are washed clean after every soaking rain.

The soil near the poultry house floor, or near the opening through

which the fowls enter or leave the house, becomes especially filthy during bad weather, and should be treated with sand and gravel as often as needed. If sand and gravel cannot be had coal cinders will answer the same purpose.

Where space is not at a premium, the best method of keeping yards that lack adequate drainage, is a sanitary condition, is to provide double yards for each pen.

When this is done, the yard not in use, can be utilized in growing a forage crop for the hens. Growing vegetables purifies the soil. At least fifty square feet of yard space should be provided for each hen.

MARK TWAIN OBSERVATIONS

These wisdoms are for the luring of youth toward high mortal altitudes. The author did not gather them from practice, but from observation. To be good is noble, but to show others how to be good is nobler and no trouble.

We ought never to do wrong when people are looking.

Let us be thankful for the fools. But for them the rest of us could not succeed.

Nothing is so ignorant as a man's left hand, except a lady's watch.

Few things are harder to put up with than the annoyance of a good example.

When in doubt, tell the truth.

There are two times in a man's life when he should not speculate: when he can't afford to and when he can.

Grief can take care of itself, but to

get the full value of a joy you must have somebody to divide it with.

Hunger is the handmaid of genius. Every one is a moon, and has a dark side which he never shows to anybody.

Training is everything. The peach was once a bitter almond; cauliflower is nothing but cabbage with a college education.

Wrinkles should merely indicate where smiles have been.

There are several good protections against temptation, but the surest is cowardice.

Habit is nabit, and not to be flung out of the windows by any man, but coaxed down stairs a step at a time.

It is your human environment that makes climate.

It is easier to stay out than get out.

Man is the only animal that blushes or needs to.



Concrete Road Between Bountiful and St. Joseph, Davis County, Utah.

What Is a Concrete Road?

A concrete road is the kind of road you have often wished for. It is a road that is always good.

There is no dust nor mud. **IT IS CLEAN.**

There are no ruts nor holes to jolt your wagon, carriage or automobile. **IT IS COMFORTABLE.**

Its gritty surface prevents slipping and skidding. The gray color makes it stand out in the dark. **IT IS SAFE.**

The cost of construction is moderate and the maintenance almost nothing. **IT IS ECONOMICAL.**

Thirty miles of concrete roads in Utah are a fitting testimonial of their value. Thousands of miles in use in all sections of the United States make the evidence conclusive.

What others have done you can do. With a tax rate of only $1\frac{1}{2}$ mills to cover the cost of construction, Utah County can well afford to build a concrete road from end to end, a road that will last for years and which will still be there for your children's use.

Let us give you further details. A free copy of "Concrete Facts about Concrete Roads" will be mailed to you upon request. Read it. See for yourself how Utah County can profit by the experience of other communities. Tell your road officials about it.

PORTLAND CEMENT ASSOCIATION

111 West Washington Street, Chicago

Utah Representative, W. F. Long, 907 Kearns Building, Salt Lake City.

CONCRETE FOR PERMANENCE

To Buy**FARMS****To Sell**

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

50 acres of the finest farm and garden land in the west. Located at Elberta, Utah. Will make a very suitable place for the man that wants a small farm at a reasonable price. Well adapted to raising any of the farm products, garden truck, alfalfa and beets. Within a short distance of two good mining camps affording a fine market for garden vegetables. On railroad giving excellent shipping facilities. Good schools adjacent. Prior water right at \$1.00 per acre if used. Look at this before you make a selection. Write or see

W. C. ALBERTSON
604 Dooly Bldg.
Salt Lake City, Utah.

FREE FARM LANDS

The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our Committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah.

FOR SALE

640 acres with 168 acres wheat, 50 acres alfalfa, well, fence, 6 horses, harnesses, implements, etc.

800 acres, 320 pasture, 235 acres in wheat and some horses, etc. Will sell part or all. Price and terms reasonable. For further information, write

N. E. MILLER
439 So. Main, Logan, Utah.

GOOD LAND FOR SALE

I have two twenty-acre tracts, two forty-acre tracts and a ninety-acre tract of land on the west side of Salt Lake Valley, under the new canals, for sale this spring. Prices range from \$80 to \$125 per acre with water. Easy terms for purchasers. Last year I sold more than 2,000 acres of this land to residents of Salt Lake County. Please write or leave inquiries with the Utah Farmer, Salt Lake City, or Lehi office. Francis W. Kirkham.

For Sale

440 acres excellent dry land, located in the north end of Cedar Valley. Mountain joins land on west. Good cattle range, Cedar Fort Creek runs through center. 170 acres Turkey Red wheat planted, 100 acres stubbles. Will make price right and terms easy. Will sell part or all. Enquire

A. E. HAWKINS
Cedar Valley, Utah.

\$3,750.00 takes a 50 acre farm at Elberta, Utah. Fine Soil, very suitable for growing Alfalfa, Fruit, Beets, Grain, Garden Truck or any farm products. Good water right at a very reasonable rate. Adjoining to good schools and is located on railroad. Suitable terms can be arranged. This is a real buy for the man that wants a small farm at a good price.

W. C. ALBERTSON
604 Dooly Bldg.
Salt Lake City, Utah.

**IDAHO RANCHES
AT LOW PRICES**

If you are interested in good dividend paying properties, located in one of the west's best farm districts. It will pay you to consider either of these properties or others listed with us.

320 acres, all under cultivation excepting 65 acres which is in pasture; only two miles from city. Has two houses, three granaries, garage and other buildings. Located near school and fully equipped. Price, including 19 horses and colts, 5 cattle, and chickens, is \$14,000—part cash and balance on terms.

160 acres, hay land; one mile from town, small house, running water through property. Price \$3,200.

320 acres, about 250 acres of which is tillable, house, barn and other buildings, good open range and timber. Price \$6,000.

160 acre farm, two miles from city. 90 acres in cultivation, all fenced. Price \$25.00 per acre on reasonable terms.

Federal Land Company

Ogden

Utah

FOR SALE CHEAP.—My home in Charleston, Utah, and Eighty Acres of Land one mile out. For further particulars write C. E. Thacker, Charleston, Utah.

FOR SALE

In Boxelder County, 50 miles from Brigham City, 960 acres of land, 800 under cultivation, 400 in fall wheat, about 40 alfalfa, 12 head horses, harnesses, machinery, buildings, well and equipment. Price and terms reasonable. For particulars write

MILLER BROS. FARM CO.
394 S. M., Logan, Utah.

50 acres at Elberta, Utah, very fertile, well adapted for raising beets, alfalfa, fruit, garden truck and all farm products. Prior water right at \$1.00 per acre if used. Can be purchased for \$75.00 per acre if taken quick. A good buy for the man that wants a small farm at a reasonable price. Write or see

W. C. ALBERTSON
604 Dooly Bldg.
Salt Lake City, Utah.

Farm Loans

CURRENT RATES
FAVORABLE TERMS
LIBERAL AMOUNTS
ALWAYS IN FUNDS

MILLER & VIELE
803-807 Kearns Building
SALT LAKE CITY

Attention Farmers

You can rent or purchase land and water at Elberta, Utah County, Utah. Deep, rich and fertile soil, adapted to grain, beets, potatoes and forage crops. Plowing can be done now.

Come at once to Elberta, where 4,000 acres and water is waiting farmers.

Write Edward T. Jones, Provo, or M. B. Whitney, Elberta, Utah.

Mention Utah Farmer when you write.

Reliable Farm Bargains

No. 1. 40 acres in the north end of Cache county valley, ½ mile from town and school, adjoins the railroad station. Small house, stable and other outbuildings. Family orchard. Soil is black loam. Part of the land sub-irrigated, balance irrigated from the canal. Price \$4000. Part cash, balance on good terms.

No. 2. 40 acres, Cache valley. All watered from the canal. Adjoins the state highway. ½ mile from school. City water passes the place. 4-room house, stables and other outbuildings. This land can be had at \$125 per acre, on ten years' time; 10 per cent down at time of purchase and ten years on the balance at 7 per cent interest. We can give you 50, 60 or 100 acres, if you desire, with this building, on the same terms and same price per acre.

No. 3. 300 acres in Cache valley. State highway runs through this property. City water passes the place. Improvements consist of a 2-story 8-room frame house, with nice shade, lawn, etc. Large barn which will hold 75 to 100 tons of hay, 25 to 30 head of stock. Granary, chicken coops and other outbuildings. Two acres of orchard. Canal runs through this farm, so that you have running water practically the year round. There are 100 acres irrigated land, practically all in alfalfa; 75 acres dry farm, 120 acres pasture land. You can buy part or all of this place as you desire. Price \$48.50 per acre; 10 per cent down at time of purchase and ten years on the balance at 7 per cent interest. This is a bargain

No. 5. Sugar beet land in the Bear River valley. This property lies within half a mile of the railroad station and town. Improvements consist of a 9-room house, stables, granary and other outbuildings. There is a first-class water right from the Bear River canal. Land is all level and is now in alfalfa and grain. 50 acres of alfalfa and 30 acres plow land. This alfalfa has been planted for a number of years and the land is now in first-class shape for sugar beets. This property can be had for 10 per cent down and ten years on the balance at 7 per cent interest. Price \$200 per acre, including all improvements and water.

No. 6. 80 acres, all under cultivation and all under irrigation from the Bear River canal. This canal is conceded to be one of the best in the state and furnishes an abundance of water for irrigation purposes. The soil is of a sandy loam nature and some of the best in the Bear River valley and will produce from 15 to 25 tons of sugar beets per acre. It can be rented at \$20 per acre cash. Improvements consist of an 8-room 2-story frame house and very fine outbuildings. Nice shade around the house, lawns, flowers, etc. Family orchard, consisting of

peaches, pears, plums, apricots and apples. This is one of the best buys we have on our listing. Can be had at \$165 per acre, cash terms.

No. 7. In southern Idaho we have 40, 80, 160 or 200-acre farms which we can sell you at from \$60 to \$100 per acre, including a full water right from a canal that furnishes four feet of water per acre each season. The soil is of a loam nature and of first-class quality. This land is unsold in the state of Idaho for the production of potatoes and sugar beets and is very excellent for hay and grain and general agricultural crops. We can sell this land on exceptionally good terms; a small down payment at time of purchase and ten years on the balance at 6 per cent interest. Call at our office and get a full folder giving a more complete description of this land.

No. 11. 2½ acres at Woods Cross. This is some of the choicest land in the select garden section in this locality. 3-room house, buggy shed, stable, chicken coops and other outbuildings. Family orchard and large strawberry bed, etc. The balance is used for truck gardening. This can be purchased at the extremely low price of \$3100. \$800 down on reasonable terms on balance, or will exchange on farm in Bear River valley in Cache valley.

No. 13. 780 acres at Woods Cross. This is located one mile west of the Woods Cross station. There were 200 tons of hay cut up on this place last year. It is capable of producing 200 tons. There is ample water for all irrigation purposes. This is an exceptionally fine dry ranch, and a cement road runs practically to the property. A 1-story 1-room brick house in good condition, stable and barn for fifty head of stock, 100 house, stable, granary and other necessary outbuildings. All necessary machinery with the place. Eleven head of horses, which weight 1500 each, 35 head milk cows, 46 calves. This can all be had at a price of \$33 per acre; enough down to pay for live-stock and implements and the balance on any reasonable terms at 7 per cent interest.

No. 15. We have on 14th South property which we can sell you at half-acre or one-acre lots or more if desired. This property can be had at \$450 per acre, \$45 down at time of purchase, ten years on the balance at 7 per cent interest. This is a good buy if you are looking for something close

KIMBALL & RICARDS

"Land Merchants,"

56-58 Main Street,
Salt Lake City, Utah.

Phone—Wasatch 963.

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

LEGHORN AND R. I. RED EGGS AND CHICKS. WRITE US.

GUHAMA
BATES & SONS
POULTRY and FRUIT FARM
PROVO, UTAH. NO. 1.

BABY CHICKS

We are now booking orders for early Delivery in White Leghorns, Brown Leghorns, R. I. Reds, Barred Rocks and Black Minorcas. Anconas also.

THE ORLAND HATCHERY
Orland, Glenn Co., California.

BABY CHICKS

C. W. Leghorn chicks from real profitable egg producers. Our chicks are vigorous and will thrive because our chicks are healthy and because no pullets' eggs are used for hatching. Our hens lay all winter. Send for booklet.

MOUND VIEW FARM
Brigham, Utah.

BEST 4 EGGS 4 BEAUTY
R. C. Rhode Island Reds, White Wyandottes, S. C. Black Minorcas and White Leghorns.
Bred for Eggs and standard requirements. Better start right. Eggs guaranteed to hatch or replaced free of charge. Write for descriptive folder and price list.

E. C. BLANPIED
Milford, Utah

Baby Chicks

We offer baby chicks from the very best utility stock. Farm raised stock that you can depend on. White Leghorns, per 100 \$9.00; per 50—\$4.75. Barred Plymouth Rocks, per 100—\$15.00; per 50—\$7.75. Rhode Island Reds, per 100—\$15.00; per 50—\$7.75. White Plymouth Rocks, per 100—\$15.00; per 50—\$7.50.

VOGELER SEED COMPANY
Salt Lake City, Utah.

FOR SALE

Single Comb White Leghorn Hatching Eggs from bred to lay stock. Our thirteenth year. Prices right.

MODEL POULTRY FARM
California

LASHER'S HATCHERY IS NOW taking orders for baby chicks—White Leghorn our Speciality. We guarantee the arrival and full count. Strong, vigorous chicks from the finest flocks of the range stock in the country. Write for 1917 price list and instructions on care of baby chicks. Lashers Hatchery, Palmdale, California.

BABY CHICKS

WE CAN FURNISH EACH AND EVERY chick throughout April, May and June. 2000 White Leghorns, 200 Buff Leghorns, 1000 Brown Leghorns, 1000 R. I. Reds, 500 Barred Plymouth Rocks, 200 White Plymouth Rocks, 100 Buff Plymouth Rocks, 300 White Wyandottes, 100 Buff Orpingtons, limited number of Barred Plymouth Rocks and White Wyandottes.

SHAMSHAW, THE CHICKEN KING
2415, 5th East
No. 3048.

BABY CHICKS

All kinds, good stuff. Eggs for setting from Prize Winning R. I. Reds, \$1.50 to \$4.00. All kinds chickens hatched. Agent for De Laval Separator. **OGDEN FEED CO.**
J. H. Shafer, Prop.

Ogden Utah

FOR SALE

S. C. Brown Leghorn eggs for hatching from bred to lay strain. Free range stock \$1.00 for 15; \$5.00 for 100 delivered. Fertility guaranteed.—D. Stratton R.D. 1, Box 207, Provo, Utah.

EXTRA QUALITY White Leghorn chicks 10c each. Carefully linebred from MacFarlane, Young, Cyphers and Martin strains of foundation stock. Eggs \$1.50 per 15, \$2.50 per 30, per 100, \$50 per 1000. Acres of free range connected with our brooding pens, 20,000 feet under roof. Only Jubilee incubators used, dissected every hatch. Don't save 2c for chick in buying and lose a dollar in raising; get the best, and succeed. **NEWTON POULTRY FARM**, Dept. 8, Los Gatos, Cal. Cague free.

FOR SALE

Eggs for Hatching. R. C. Brown Leghorn and Black Langshan. \$1.50 per 15; \$7.00 for 100. Fertility guaranteed.

J. H. STUART
Wells, Utah. Box 73

200-250, EARLY MATURING, WINTERING Leghorns, Reds, Rocks Wyandottes, Anconas. \$3.00-\$10.00 yearly profit per hen. Breeders, Eggs, Chicks. Hundreds weekly; many repeat orders. Quickest delivery. Guarantee you profit with high. J. Beeson, Pasadena, California.

FOR SALE

Baby chicks, hatched on the ranch, from the White Leghorns that are carefully selected by the Hogan system bred for heavy egg production large size, 11 cents each, selected hatching eggs \$1.25 for 15 by parcel; \$5.00 for 100 by express. Breeding stock, females \$1.50 each, males \$5.00. All pure white type. Sure to please.

H. W. WOOD
1641 1/2 Street, Glendale, Calif.

80 Acres of Good Cedar Valley Land for sale. For location, price, and terms, write to

LI J. CLAYSON
American Fork, Utah.
Phone 29 or 83-W-1.

Barred Plymouth Rock and White Leghorns for Hatching. Prices reasonable.

WILL D. CLAYSON
American Fork, Utah Phone 83-W-1

FOR SALE

MINORCA AND ORPINGTON EGGS.
LITTY STRAINS
per 15; \$5.00 for 100.

RS. P. MAHER
639 1st St. Ogden, Utah

Who answer advertisements,

RAG APPLE KORNDYKE 13TH

BULLS FOR SALE

From A R O dams which we are offering at reasonable prices, write us.

NELSON BROS.
Richmond Utah

FOR SALE

First class Registered Holsteins Bulls, ranging in age from two months to one year. Highest class breeding. Farmers' Prices. **STATE INDUSTRIAL SCHOOL**
Box 41, Ogden, Utah.

Lumber, Millwork, Fence Posts, wholesale mill prices. Send carpenter's list for freight prepaid estimate. Keystone Lumber Company, Tacoma, Washington.

Duroc Jersey Boars

Boars chuck full of Grand Champion Breeding. Bred the same way as our Utah State Fair Winners. We have a great lot of top spring Boars and are offering them at bargain prices. Every Boar guaranteed to please or money refunded. Write us today.

RICHARDS LIVE STOCK CO.
Virginia Idaho
The West's Best Durocs.

Using Sugar

When housewives use sugar that is made in the west, such as Table and Preserving Sugar, they are securing a product that is not only 100 per cent pure but which also contains 98 per cent of energy when consumed as food—a body builder, a strength builder and an energy builder.

YOU NEED THIS FOOD

SPRING SEED WHEAT

Get your supply now while prices are reasonable. Choice re-cleaned stocks, any quantity from a pound to a carload. Send for free descriptive catalogue.

BAILEY & SONS CO.

SALT LAKE

FOR SALE

White Flint Dry Land Seed Corn. Well bred for five years. Gave a fifty bushel yield last year. Price 4 cents per pound, F. O. B. Modena.

SETH M. JONES
Enterprise Utah

SAVE MONEY ON YOUR LUMBER
BILL. WRITE US. PACIFIC COAST SAWMILL COMPANY, Portland, Oregon.

Registered Stallions

FOR SALE

One Black, coming three year old Stallion. One Grey, coming three year old Stallion. One Brown, coming two year old Stallion. Four Black, coming two year old Stallion.

All registered in the Percheron Society of America Stud Book.

All strictly first-class Stallions.

Will be sold at a very reasonable price considering the quality.

All stock home raised.

W. S. HANSEN

Collinston Utah

EAR PERFECT TAGS
Samples Free
ATTACHED INSTANTANEOUSLY
Name and Address. Numbered if Desired.
LEG BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

Buy more baby chicks, raise more poultry, to help feed the world with poultry products.

Plant an extra acre for the wife and children of the man who is at the front fighting for his country.

Send in Your Order for Butter Wrappers Today.

Oakland Sensible Six

The Practical Car for You

Up any hills—over any roads—the **Oakland Sensible Six**—\$87—will take you with ease, comfort and economy.

It's a big car, though it weighs but 2150 pounds, and its long semi-elliptic springs—51 inches in rear—over-size tires (32x4), longheel-base, (112 inches), all give the **Sensible Six** that easy riding ality which wins the enthusiastic praise of owners everywhere.

The valve-in-head motor develops 41 h. p. at 2500 r. p. m.—ohorse power for every 53 pounds of car weight. On the hills on bad going the **Sensible Six** has more actual power and more propionate power than any other car of its weight.

This power with light weight means fuel and tire economy. Average drivers get from 18 to 25 miles per gallon, and from 8,000 12,000 miles per set of tires.

Oakland Eight—\$1585—is built for those who need a big, urious 7-passenger eight cylinder car of maximum pull and speed.

Our new book "How to Buy Your Car Intelligently" will prove he to you no matter what car you buy. Write for it to-day—it's : (54)

OAKLAND MOTOR COMPANY, Pontiac, Mich.



"Sturdy as Oak"

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH

VOLUME XII; No. 38

APRIL 21, 1917

Utah Is Noted For Her Purebred Horses



We Will Do Our Part to Increase The Food Supply

THE people of Utah will co-operate in every way possible to bring about an increase of food production.

More than two hundred community leaders met in Salt Lake City at the State Capitol today (April 21) and reported conditions in the different parts of the state. They discussed plans and methods of securing seed and help in order to plant every available foot of ground.

Dr. E. G. Peterson, President of the Agricultural College presided at the meeting. Governor Pamberger said he would do the limit in his

power to help in any way possible for the benefit of the State.

John T. Caine III reported the meeting of representatives of seven western states held at Berkeley, California. He said that the food supply of the country is short. The nation's wheat supply is 35 per cent under normal and similar conditions prevail in live-stock and other agricultural departments. He urged the increased production of grains, potatoes, and live-stock, especially poultry and hogs.

Reports from the different counties brought out the fact that the people

are aroused to the gravity of the situation. In nearly every community they are organized and co-operating together to help in every way possible the serious condition with which our nation is confronted.

In some counties they will have an increase of from 25 to 35 percent in food stuff over last year. In other localities they could do the same if they had seed and help to plant it.

The back-yard and vacant-lot gardens were emphasized. It was urged, however, in a most emphatic way that these gardens be planted to

crops that can be stored, such as beans, potatoes, carrots, parsnips and to plant the late varieties.

The work that is being done in Logan and Provo will show what interest is being taken. In Provo they made a canvass and have 500 lots that will average one half acre each. In this one city 250 acres will produce a wonderful lot of vegetables. Much of this land has been idle for years.

In Logan a supervisor will help the boys and girls and all concerned in producing a maximum crop of
(Continued on page 10)

SUGAR BEETS

COMPARE YOUR COSTS

WITH THESE

Some few weeks ago we gave some comparative costs of wheat, sugar beets and oats by Mr. Holmgren of Garland, in Box Elder county. It would seem that the cost of producing an acre of wheat or sugar beets varies in different localities. Each community has its problems to deal with and the result is that it costs more or less to farm at different places.

We give below some figures furnished by Mr. Heber Austin of Idaho Falls, which shows the cost in Idaho of producing these crops.

COST OF PRODUCING ONE

ACRE OF SUGAR BEETS

Plowing and preparing	
seed bed	\$ 4.00
Seed and planting	2.75
Hand labor—13 tons	22.75
Cultivating for season	2.00
Irrigating for season	2.00
Water rent, average	1.00
Plowing out beets	2.50
Hauling beets to rec. station—13 tons at 50c....	6.50
Fertilizing	5.00
Rent of land	10.00

Beets produced—13 tons at \$7.00	\$91.00
Beet tops	2.00
Net profit—13-ton crop....	\$34.50

	\$93.00	\$93.00
Net profit as above		\$34.50
Additional cost 17-ton crop:		
Hand labor, 4 tons at 75c \$ 3.00		
Hauling, 4 tons at 50c	2.00	
Additional 4 tons at \$7....		28.00
Net profit—17-ton crop....	57.50	

COST OF PRODUCING ONE

ACRE OF WHEAT

Plowing and preparing	
seed bed	\$ 3.50
Seed, 1½ bu. at \$1.25.....	1.68
Planting .....	.50
Irrigating for season	2.00
Water rent, averaging.....	1.00
Cutting and binding	1.75
Shocking .....	.50
Stacking	1.50
Threshing 35 bushels	2.75
Hauling to market	1.00
Fertilizing	5.00
Rent of land	10.00

Wheat, 35 bu. at \$1.25	\$43.75
Straw	2.50
Net profit	15.87

	\$46.25	\$46.25
Net profit as above		\$15.87
45 bu. crop increases cost	2.00	
Additional 10 bu. at \$1.25		12.50
Net profit on 45-bu. crop	26.37	

COST OF PRODUCING

ONE ACRE OF OATS

Plowing and preparing	
seed bed	\$ 3.50
Seed—100 lbs.	1.75
Planting .....	.50
Irrigating for season	2.00
Water rent, average	1.00
Cutting and binding	2.00
Shocking .....	.50
Stacking	1.50
Threshing	3.00
Hauling to market	1.00
Fertilizing	5.00
Rent of land	10.00

60 bu. oats, 2400 lbs. at \$1.75 per cwt.	\$42.00
Straw	4.00
Net profit	14.25

	\$46.00	\$46.00
Net profit as above		\$14.25

80-bu. crop increases cost	1.50
Additional 20 bu., 800 lbs. at \$1.75 per cwt.	14.00
Net profit on 80-bu. crops	26.75

MORE PRIZES FOR SUGAR BEETS.

The West Cache Sugar company will give \$1000 in prizes for the best three ten-acre patches of sugar beets grown during the season 1917, as follows: First prize, \$500; second prize, \$300; third prize, \$200. The prizes will be awarded by a committee to be selected by the Agricultural college. The following will be the basis of determination: Greatest number of tons per acre, 40 credits; highest per cent sugar in the beet, 25 credits; size and shape of beets, 10 credits; appearance of field, 5 credits. The only thing necessary for anyone to enter this contest is to hold a contract with the West Cache Sugar company for ten acres or more of sugar beets. All contestants are required to notify the company in writing, giving their names and stating the location of the land on or before May 31, 1917.

SOME ESSENTIALS

OF PRODUCTIVE SUGAR BEET RAISING

By Reuben Hansen.

Any one familiar in the least with the raising of sugar beets knows that the following essentials are indispensable in the successful growing of this farm crop.

1. A large amount of available plant food. There may be a sufficient amount of food in the soil to supply the needs of the plant, but if it isn't in a form which can be readily used by the plant it could just as well not be present in the soil as far as the plant is concerned.

In the growing of sugar beets it is very important to maintain in the soil a large amount of available plant food. This condition can be maintained by the rotation of crops or by applying one or more of the following fertilizers: stable manure, green manure (the plowing under of some growing crop), and commercial fertilizers.

Often the amount of stable manure produced on most farms is insufficient to supply the required amount of organic matter for our soils. It is sometimes necessary to supplement the stable manure by plowing under green crops.

The effect of green manuring varies according to the original character of the soil. Sandy soils are made darker in color and its moisture holding capacity become much greater. Clayey soils are made more porous, better tilth can be obtained and are less likely to bake. Loamy soils are less affected than either sand or clay.

Leguminous or pod bearing plants, such as peas, beans, alfalfa, clover, etc., are more valuable for green manure than others, because they not only provide humus but also have the ability to use the nitrogen of the air, which upon decaying they add to the soil.

2. A Good Stand.—Plowing should always be done when the ground is in what is called a friable condition, that is, when it is capable of falling apart as the furrow is turned so that there are no air spaces below, as is the case when the ground is too wet or when it is dry and cloddy. Good plowing when the soil is right physically is the only condition that will insure the making of good seed and root bed.

The seed requires a uniformly fine, firm, moist bed in order to produce a quick and uniform germination, which is desirable in beet culture. The more quickly the seeds germinate the more certain a good stand, which is the first requirement of a satisfactory crop.

Good seed is the second requirement of a uniform stand. It is impossible

to produce the best of crops unless good seed is used. In sugar beet production, all things being equal, the large home grown seeds insure a more uniform germination, giving more vigor to the plants which is desirable, because if the plants all start at once each plantlet helps others to get through the soil, and the plants

will then be of nearly uniform size when ready to thin.

4. Irrigation.—The proper use of irrigation water is one of the important factors in the growing of sugar beets under irrigation. The time and method of application and the quantity of water used are the essential

(Continued on page 15)

PRESIDENT WILSON SAYS

"By planting and increasing his production in every way possible, every farmer will perform a labor of patriotism for which he will be recognized as a soldier of the Commissary."

That Our People may be Properly Educated to meet the Serious Emergency that Threatens our Nation the

AGRICULTURAL COLLEGES OF UTAH, NEVADA and CALIFORNIA

Will Operate a

National Preparedness Train

Through Their Three States Over the Lines of
THE SALT LAKE ROUTE

This train will be the most elaborate Educational Special ever operated by American Institutions of learning and while this Magnificent Display

Appeals Directly to the Agriculturist

It also Carries a Most Important Message to DWELLERS in the CITIES The work advocated is necessary to the Maintenance of Our Nation and WE ALL MUST DO OUR SHARE TO WIN VICTORY

TWELVE CARS OF EXHIBITS, Electrically Lighted, Equipped and Operated

The Consolidated Wagon & Machine Company

general agents in the Intermountain Empire for the newest and most effective of farm and ranch labor-saving equipment, will exhibit the latest productions of the

HOLT MANUFACTURING COMPANY

Including its Wonderful
CATERPILLAR TRACTOR, operated in conjunction with JOHN DEERE
PLOWS

The C. L. Best Gas Traction Company of California

will Exhibit its Newest Development in A GAS TRACTION ENGINE

THE AVERY COMPANY of Peoria, Ill. will Exhibit a Flock of Avery Tractors

At every point where this National Preparedness Train makes a Stop these Tractors will be unloaded and make an Exhaustive Demonstration of the possibilities for increased development in both Acreage and Crops where these wonderful labor-saving machines are operated.

THE FAIRBANKS-MORSE COMPANY

will exhibit a car of electric devices, including generators, dynamos, electrically operated devices for the modern equipment of the home and ranch, together with a line of electric and gas driven motors, pumps and the very latest novelties in water handling and electric generating equipment.

The Utah-Idaho Sugar Company in Co-operation with The Sugar Companies of Southern California.

will present a car containing exhibits illustrative of every phase of Sugar Beet Culture together with a demonstration of the unlimited household uses for which this magnificent product is adapted.

A Car Devoted to an Exhaustive Demonstration of Red Cross Work From which may be quickly learned the necessary requirements of FIRST AID TO THE INJURED. There will also be a complete Exhibit of Home Economics with plans for the perfect equipment, maintenance and operation of the home.

Two most important Features of the Train will be

A Car Devoted to Bean Culture and a Car Demonstrating Forage Crops.

These two cars present Educational Possibilities that are specially necessary and particularly valuable in our present crisis. The U. S. Government will present a car devoted to a complete Exhibit of FORESTRY. The train will also include an Exhibit of Highest Grade Blooded Stock. Latest Designs in Ranch Buildings, General Farm and Irrigation Equipment and An Exhibit of Poultry Culture to which the Government particularly requests Special Attention.

A CORPS OF TWENTY INSTRUCTORS

will accompany the train, directed by Dean Thomas F. Hunt and Prof. W. T. Clarke, Extension Director, College of Agriculture, University of California. Dr. E. G. Peterson, President, and Prof. John T. Caine, III, Director of Extension, Utah Agricultural College. Prof. Charles S. Knight, Dean and Charles S. Norcross, Director of Extension, College of Agriculture, University of Nevada.

THIS MAGNIFICENT NATIONAL PREPAREDNESS TRAIN WILL BE AT

Salt Lake City, May 2; Tooele, May 3; Lehi, May 4; American Fork, May 5; Provo, May 7; Spanish Fork, May 8; Nephi, May 9; Delta, May 10; Panaca, Nev., May 11; St. Thomas, Nev., May 12; Milford, Utah, May 14; Lund, Utah, May 15; Las Vegas, Nev., May 16.

The Beautifying of Home Grounds

By Emil Hansen, Floriculturist and Landscape Gardner, Utah Agricultural College.

It is a pleasant thing to think of "Home." A picture full of memories is generally clear to the mind when thinking of that spot which we call "Home." It is not only the house that we have in mind, but also the surroundings. Therefore, the perfect picture of home in our memory is a house framed with trees, shrubs and roses and other flowers in connection with a well-kept lawn.

"Be it ever so humble, there is no place like home"—and the fact is that the humble home with the above mentioned plantings gives one more impression of "Home" than does the mansion without this. Regardless of the expense, it will look cold and uninviting without these features.

There is great need of improvement in this line throughout the state. In the past few years the spirit of improvement has been aroused and many are desirous of improving their home surroundings. However, owing to existing conditions such as lack of water, etc., it has been impossible to do much along this line. Others have made attempts, and, on account of lack of knowledge as to best varieties of trees, bushes, and roses for this intermountain region, have been doomed to disappointment. As a result, they become discouraged and no further attempt is made for improving their surroundings.

In many cases the man as head of the family is so preoccupied with business, stock and crops that very little time is left for improvement of the home surroundings. It is therefore left to the wife to do this planning without any assistance from the husband. It would be well for such men to stop and consider that by beautifying the home grounds the value of the property is increased to such an extent that it exceeds the actual expense connected with the improvement. Then too in the lives of most men there comes a time when they are less active in business affairs. It is then that they can enjoy the fruits of the effort expended in planting proper trees and shrubs.

As a rule in purchasing a piece of ground for a home the first thought is the house. The surroundings are not given much consideration. Some, however, form a plan for this improvement and arrangement in their heads, but do not plan it out in detail. It is far better to have definite plans formulated before undertaking the work. By so doing a great deal of unnecessary expense is saved as well as obtaining greater satisfaction.

The architecture of the house should be in harmony with the natural surroundings. In laying out the grounds the plan should be as important as for that of the house. Many will go to great expense in regard to the house while the surroundings are given little or no attention. In fact they make an effort to save this expense at their own loss.

There are various types of landscape gardening, such as the English, French, and Italian. These types are more or less formal than is the natural landscape gardening. The writer will not attempt to suggest any set style since every house and its surroundings should suggest its own design, and the designer should form his or her own original ideas in accordance with a general plan. For some

cases there may be large boulders or old trees on the grounds which would give a pleasing effect to remain as they are. Under certain circumstances the surroundings will invite (Continued on page 11)

How To Grow Potatoes For Profit

By Wm. Stuart, U. S. Department of Agriculture.

While it is probably true that no one engages in the production of any crop with any other motive than that of deriving a certain amount of profit from it, yet it frequently happens that when the crop is finally produced and marketed and the disbursements

and receipts are compared, the grower finds that his balance is on the wrong side of the ledger. In other words, when he has charged against his potato crop all the legitimate expenses connected with its production and comes to offset these expenses with the proceeds from the sale of the crop he finds that he does not have enough money to strike a balance.

The object of this paper is to try to set forth those factors in potato production that make for success. Briefly stated, the factors essential to the production of a profitable crop of potatoes in irrigated regions are as follows:

1. The selecting of a suitable type of soil.
2. Deep plowing and thorough preparation of the seed bed.
3. A plentiful supply of available plant food.
4. A liberal use of good seed properly cut and planted.
5. Good cultivation of the growing crop.
6. Intelligent application of water.
7. Protection of the plants against insect or fungous pests where such are likely to cause trouble.
8. Careful harvesting and intelligent marketing of the crop.

While this may seem like a rather formidable array of factors, yet none can be safely disregarded if a maximum crop of tubers is to be produced. A good rule to follow is that of employing every agency which will increase the crop with a less expenditure of money than that represented by the added crop produced.

Suitable Land.

Generally speaking, sandy or gravelly loam soils are best adapted to the growth of potatoes. However, they will succeed fairly well on any soil that is well drained, outside of a light shifting sand or a heavy, sticky, clay soil, provided the soil possesses the necessary organic and mineral matter to sustain the plant. In the irrigated regions of the West, where alfalfa is generally grown, an alfalfa crop is considered the most desirable one to precede the potato. Usually the last cutting of alfalfa is allowed to remain uncut to furnish plant food for the potato crop.

Plowing and Fitting the Land.

In preparing alfalfa land for planting to potatoes the usual practice is to crown the land in the fall. This consists in plowing very lightly, about 3 inches, using a special plow point which cuts off the crowns of the plants and turns them up, thereby exposing them to the drying effects of sun, wind, and frost; the object being to kill them so as to get rid of unnecessary work in the growing crop. In order to facilitate the drying-out process, especially with a heavy sod, it is a good plan to run the disk or cutaway harrow over the field in the autumn so as to thoroughly cut up the crowns and roots and prevent any growth. In the spring plow the land 9 and 10 inches or more in depth and thoroughly fit for the reception of the crop. The more carefully the seed bed is prepared and the greater the attention paid to the conservation of the soil moisture stored away during the winter and spring months the longer can irrigation of the crop be deferred.

Plant Food.

Fortunately for the western potato (Continued on page 7)



Testing alfalfa under dry farm conditions the Utah Experiment Station found the crop to be most profitable when grown for seed production and for this purpose sowing in rows proved the best practice. The plants can get the great amount of sunshine needed for seed production and intertillage can be practiced when planted thus.

The President's Appeal to Farmers

The supreme need of our own nation and of the nations with which we are co-operating is an abundance of supplies, and especially of foodstuffs. The importance of an adequate food supply, especially for the present year, is superlative. Without abundant food, alike for the armies and the peoples now at war, the whole great enterprise upon which we have embarked will break down and fail. The world's food reserves are low. Not only during the present emergency, but for some time after peace shall have come both our own people and a large proportion of the people of Europe must rely upon the harvests in America. Upon the farmers of this country, therefore, in large measure, rests the fate of the war and the fate of the nations. May the nation not count upon them to omit no step that will increase the production of their land or that will bring about the most effectual co-operation in the sale and distribution of their products? The time is short. It is of the most imperative importance that everything possible be done and done immediately to make sure of large harvests. I call upon young men and old alike and upon the able-bodied boys of the land to accept and act upon this duty—to turn in hosts to the farms and make certain that no pains and no labor is lacking in this great matter.

Let me suggest, also, that everyone who creates or cultivates a garden helps, and helps greatly, to solve the problem of the feeding of the nations; and that every housewife who practices strict economy puts herself in the ranks of those who serve the nation. This is the time for America to correct her unpardonable fault of wastefulness and extravagance. Let every man and every woman assume the duty of careful, provident use and expenditure as a public duty, as a dictate of patriotism which no one can now expect ever to be excused or forgiven for ignoring.

The supreme test of the nation has come. We must all speak, act and serve together!

WOODROW WILSON.

DAIRYING

COW TESTING ASSOCIATIONS.

Sterling E. Price.

To Denmark we owe the distinction of beginning cow testing associations, and strange as it may seem it was a woman who first made the suggestion. It came as a result of increased national taxes, after the long wars of William of Orange, and forced upon the farmers greater economy in farm production and as dairying is the main income, especially great economy in dairy production had to be practised.

It took nearly three years of advocating and advertising before the first

association was formed. This association began work on May the first 1895, with an aggregate of 13 herds. The improvement in these herds was so marked that they began increasing very rapidly and by 1909 there were 530 such organizations and were still increasing in 1915.

Before Denmark began the work of testing the average yield of butter fat per cow was 112 pounds. By 1908 the average yield had increased to 224 pounds of fat, or had just doubled. It is generally conceded that this great increase was almost entirely due to the cow testing associations so that in 12 years time they had doubled the production of Denmark's dairy output without increasing her number of cows.

Two years after Denmark had organized her first association Germany (1897), seeing their great economical value began similar organizations and within the next three years Sweden, Norway, and Finland had adopted the method. Within a few more years all countries wherein dairying is a business had begun to drop into line.

Sweden obtained even more striking results than Denmark. The average production per cow per year was increased 109 pounds of fat in 10 years time, individual herds running as high as 176 pounds per cow, increase.

The first American association was established in Fremont Co., Michigan, in 1905. It was known as the Newago Co., Dairy Testing Association. In four years it had increased the average yield of fat per cow per year 49.5 pounds. Two years later Michigan had increased her number to four associations and the next year Maine and New York came into line with one each making a total of 6 in the three states. Since then the yearly growth has been 25 in 1909; 40 in 1910; 64 in 1911, 62 in 1912, 100 in 1913, 163 in 1914, 211 by the end of 1914 and by July 1915 there were 345. Since that time no report has been made but they have been on a steady increase so that at the present time there are probably 400 or more operating representing states from all parts of the country. The states now represented number 33 with an average of 11 associations to each state represented.

Ohio up to Sept. 1916 reports the biggest increase it being 300 per cent while at the same time the average increase of all the states was 52.2 per cent. Iowa is fast coming to the front. It had July 1915, 23 and have now 25 more proposed some of which have begun operations and many others are ready to begin. Wisconsin has the greatest number, having 51, New York second with 47, Vermont 3rd. with 38, Iowa 4th. with 23, Minn. 22, the others as follows: Penn. 19, Oregon 15, Wash. 12, New Hampshire 11, Mich. 10, Cal. 9, Indiana 7, Conn. and Maryland each 6, Mass., Neb., and New Jersey each 4, Ill., South Dakota, and West Virg. each 3, Ariz., Del., Idaho, Mo., Rhode Island and West Virg., each 2 and Kansas, Ken., Missi., Montana, and Tenn. each 1.

A report from Wisconsin just recently, shows the advantage of an association very well; it shows that there is a gradual increase in the cost of feed with increasing production, but there is a much greater increase in profit as the production increases.

The cows were divided into groups varying in fat 25 pounds, and the groups compared. In herds averaging 170 pounds of fat per year the cost of feed was \$5.50, gradually increasing up to \$51.81 for cows producing 387 pounds of fat. At the same time the group producing 170 pounds of fat returned a net profit of \$19.90 while the cows producing 387 pounds of fat returned a profit of \$74.02, showing a difference in profit

of \$54.12 while the difference in feed cost was only \$15.91, in other words it would take three of the poorer group to give the same profit as one of the best group. This was only a typical association and included cows of all kinds, breeds, and all ways of handling.

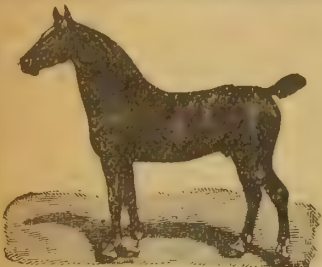
This not only shows the net profit

returns but it shows the vast difference in economy of production of butter fat and milk.

Michigan claims an increase in production of 49.3 pounds of fat per cow per year, Fendendale Ass. of Cal. an increase of 40.5 pounds, Pioneer Ass. of Iowa 33 pounds, another Ass. in Iowa 91 pounds. Wisconsin gives an

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeney, Capped Hock,
Strained Tendons, Founder, Wind
Puffs, and all lameness from Spavin,
Ringbone and other bony tumors.
Cures all skin diseases or Parasites,
Thrush, Diphtheria. Removes all
Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism,
Sprains, Sore Throat, etc., it is invaluable.
Every bottle of Caustic Balsam sold is
Warranted to give satisfaction. Price \$1.50
per bottle. Sold by druggists, or sent by ex-
press, charges paid, with full directions for
its use. Send for descriptive circulars,
testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

If you want money,
drop us a line.

We loan on first mortgages
on Utah farms or Salt Lake
City real estate at reasonable
rates.

Prompt action and fair treat-
ment if you do business with us.

Palmer Bond &
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WALKER BANK BUILDING
SALT LAKE CITY

Steady Growth does
not just happen.

There must be a good
reason.

The deposits of this bank
have grown \$2,167,798 in one
year and nearly \$5,000,000
in seven years. For the reason,
ask our customers.



Walker Brothers
Bankers

Founded 1859.
Resources over \$8,800,000.
SALT LAKE CITY

Planet Jr. Beet Cultivator

—greatest time- and labor-saver for beets and beans—

This No. 3 Planet Jr 4-row Sugar-Beet and Bean Horse Hoe cultivates 4 rows of beets at a time, 18 to 22 inches apart. The patent shield hoes run close without covering plants or injuring roots. All steels, specially hardened, hold shape, keep sharp, and add 50 per cent to wear. Two styles of beet-cultivators—lower prices than ever before. Fully guaranteed. Come and get yours.

Consolidated Wagon and
Machine Company

20 YEARS IN WHICH TO PAY

**\$10 or \$20 an Acre Down---
Then the Land Will Pay For
Itself as You Go Along---**

In the heart of Cache Valley, 2½ miles west of Logan, Utah, lies Richland Acres, 2800 acres of the richest land in the west. Richland Acres has TILED DRAINED silt loam soil, ranging in depth to six feet; all city conveniences—schools and colleges—railroad traverses the entire length of the tract—sugar beet and condensed milk factories conveniently near—telephones—electric lights—and rural free delivery. Where else can you find such soil—with the same conveniences—on the same easy terms? Here at

Richland Acres

TILE DRAINED

"THE HEART OF CACHE VALLEY"

lies your opportunity. We are already developing the land—you will have no trouble in clearing a good sum on your first year's crop.

Richland Acres is land that will appeal most strongly to you men who know the money to be made from beet soil that will yield fifteen to twenty tons per acre from the first year—it is land that will appeal to every man who

ever ran a dairy herd or raised blooded stock; it is land that is rich in hay and pasture possibilities. Richland Acres has the finest irrigation water rights in the state—at a cost of but 11 and 12 cents an acre.

Investigate these assertions! Call, phone, write or wire to our agents—they will gladly give you detailed information regarding Richland Acres.

ED. D. SMITH & SONS,
Exchange Place, Salt Lake.

H. E. SMOOT,
Provo, Utah.

REXBURG REAL ESTATE & ABSTRACT COMPANY,
Rexburg, Idaho.

THE CARDON COMPANY,
Logan, Utah.

JOSEPH H. WATKINS,
Brigham City, Utah

LOGAN LAND & DRAINAGE CO.

A. F. CARDON, MANAGER, LOGAN, UTAH.



average increase on 10 herds that have been in for several years, of 27.4 pounds and others from Wis. give 48 pounds, 45.7 pounds, and 34.4 pounds per cow per year. The average of all reported from all the associations was an increase of 46.2 pounds of fat.

Were the same results obtained on every cow that is milked in Utah it would mean to Utah, at the average price for 1916, \$1,178,100.00 yearly or enough to pay the expenses of the associations and leave \$1,007,500.00 to the farmers each year. The latest report shows 8025 herds and approximately 140,000 cows represented. Taking the average increase of the herds reported to be the average of all being tested it means an increase of 6,468,000 pounds of butter fat and an increased profit of \$1,832,912.00 per year.

The cost to the farmer of running an association is between \$500 and \$600, making a total cost for all now running of approximately \$175,000. Taking this from the total increase that we see results, we have \$1,661,912 net increase to the farmers. This amounts to \$4512.85 per association per year and an average of a net gain per head represented of \$237.52. The average number of herds to the

association is 19.2. The total cost of an association, including all expenses, is figured to be approximately \$800 each, making a total cost of operating those now entered of \$280,000 which leaves a total net profit to the country of \$1,556,912 yearly, these gains do not show any extreme of the results obtained but the general average of all. I am unable to find the report of any association where the average increase of the herds there in had not more gain and that gained enough to pay at least the expenses of the association. A good many have failed, however, or at least gone out of business but no report was given of why.

If all the cows in the United States could be tested and the same average increase, resulted it would mean an increase of 1,070,200,000 pounds of butter-fat per year and at the average price of butter-fat for 1915, it would mean \$303,936,800 to the farmers of the United States; or assuming this same increase, we could in the next few years weed out 4,928,572 of the poorest cows and produce the same amount of butter-fat with those left. By so doing, taking the average cost of feeding these cows as \$37.50 a year we would save a great many million dollars yearly in our feed bill.

We must not reckon the gain in fat as the only gain made by the advantage of an association. First among the other gains is that of the saving through the improved feeding methods introduced. Many associations report a gain of several dollars a head from this source. If there were only \$5.00 a year saved from this on each cow it would mean to the dairy men of this state \$425,000 yearly. Making a total saving or gain of \$1,432,500.00 a year, if all the cows were tested.

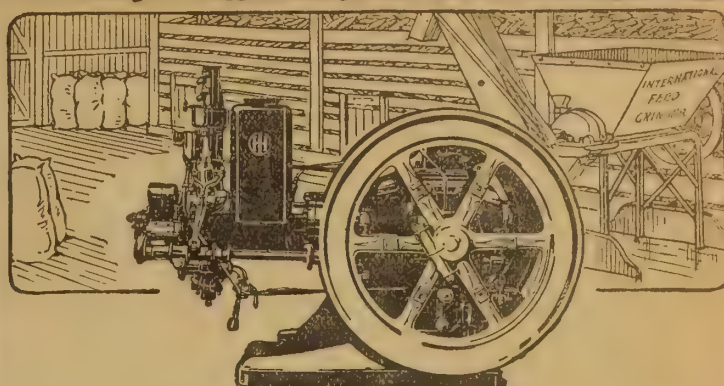
Second—In addition to selection for production and improved methods of feeding the cow testing association shows the uselessness of milking mixed and low grade cows for large profits. A comparison of the largest low grade herd and the largest herd of purebreds shows this very markedly. The low grade herd returns showed 153 pounds of fat and 3861 pounds of milk and the purebred herd returned returned 301 pounds of fat and 9027 pounds of milk, showing a difference of 148 pounds of fat and 5166 pounds of milk. This striking difference is as easily shown between a high grade herd and a low grade herd. From this report we see now close the low grade herd was to being a loss to the owner but the association showed which side of the ledger the account belonged. From such herds many good herds have been bred up but it takes a long time and a nothing but pure bred sires to build from such stock.

One of the striking benefits revealed in figures for the years work is the marked increased production for the second year as compared with the first. In all the reports given the second and third years seem to be the banner years, little difference being shown them but if any in favor of the second year.

Look over the unthrifty appearing cattle and calves and see if they are infested with warbles. By running the hand down the back the presence of the parasites will be noted by small lumps under the hide. Each lump contains a grub that breathes through a small hole at the top of the lump. When there are a dozen or more of these grubs in an animal's back it can not thrive. The grubs should be squeezed out and killed or a small sharp pointed wire or knitting needle should be inserted into the hole and the grub killed. Hides from animals with grubs are reduced in value as much as two cents per pound. The number of ox warble flies that lay the eggs next summer can be reduced by removing and killing the grubs this spring.

Solid as the turnip roots appear, they contain on an average about 89 per cent of water, or a trifle more than is found in whole milk. The flavor of the turnip, like that of its relatives, the cabbage and the radish, is due principally to compounds of

sulphur, which are so volatile that compounds pass into the milk and give it an unmistakable flavor.



Cut Down Engine Expense

IT pays to buy a Mogul kerosene engine, both because it is a good engine and because it operates on kerosene. It takes about five gallons of fuel to run a 4-H. P. engine at full capacity for ten hours. Five gallons of gasoline costs close to \$1.00. The same amount of kerosene costs only 40 cents or so. That is a big saving. It makes Mogul power wonderfully cheap.

Remember this too—the Mogul engine that operates successfully on kerosene has got to be a better engine than one that works on gasoline. It must be built more carefully and of better material. It also runs more steadily. It lasts longer. Because it burns kerosene it costs so little to operate that it is far and away the cheapest engine to use.

Get the whole story from the local dealer who handles Mogul engines or write to us for it, but don't buy any engine until you know just what it means to have a Mogul that operates successfully on common coal oil.

International Harvester Company of America

(Incorporated)
SALT LAKE CITY
Champion Deering McCormick Milwaukee Osborne Plano



It Beats Out the Grain

THE big cylinder throws straw, chaff and grain against the "Man Behind the Gun." 90 per cent of the grain is forced out here. The straw goes over; then shakers beat out remaining grain. The farmer saves more of his grain—the thresherman makes more profits. Hire or buy a

Red River Special

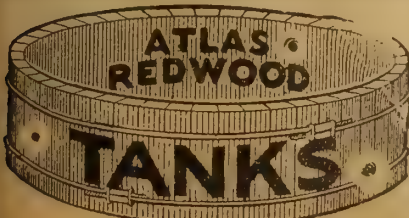
and save your high-priced grain. "The fastest thresher and the best grain saver we have ever seen," says W. T. Wilson and three other farmers of Wanesville, Ohio.

If you are a thresherman, write and learn why Red River Special owners get the big money-making runs. Red River Special outfits are built to thresh fast and well. Speed up your run—get in more good jobs—please more customers—make a bigger income. Save the farmer his thresh bill by saving his grain and time.

Write for Free Description.

Nichols & Shepard Co.

In Continuous Business Since 1848
Builders Exclusively of Red River Special
Threshers, Wind Stackers, Feeders, Steam
Traction Engines and Oil-Gas Tractors
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TANKS CARRIED IN
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GREEN MACHINERY & MANUFACTURING CO.

Machinery Merchants & Manufacturers
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Interlocking CEMENT STAVE Silos



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M. J. Bartholamew, Ogden Utah.
12 x 35 feet, 100
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Mr. Bartholamew will gladly answer your questions regarding his silo or Blizzard Cutter.

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ADDRESS



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Lehi, Utah.

Published every Saturday by the
DESERET FARMER PUBLISHING CO.
LEHI, UTAH.

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Canadian and Foreign postage 50 cents a year extra.

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Lehi, Utah, Kirkham Building.
Our office at Salt Lake City, Utah,
is in the McIntyre Building.

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Change in Address—When ordering a change in the
address, subscribers should be sure to give their
former as well as their present address, otherwise the
address cannot be changed. This is a matter of im-
portance to you and to us.

OFFICIAL ORGAN

Utah Horticultural Society, Utah State Dairymen's
Association, Utah State Bee Keepers' Association
Bear River Valley Farmers' Protective and Commercial
Association, Agricultural College Extension Depart-
ment and Utah State Fair Association, Utah-Idaho
Millers' and Grain Dealers' Association, Utah Fruit
Growers Association.

OUR GUARANTEE

We guarantee every subscriber against loss thru dis-
honesty or attempted swindle by any advertiser in
this publication. We do not attempt, however, to
adjust trifling differences between the subscribers and
honest responsible advertisers, nor will we pay the
debts of honest bankrupts. Notice of complaint
must be sent us within thirty days from date of the
transaction, and the subscriber must have mentioned
Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent
upon application.

Now is the time to plant some vegetables.

Use only the best seed—it pays even if it cost
more.

Clean up and burn all rubbish around the home.
Plant any vacant ground to vegetable.

For a long time we have been urging all our
readers to plant a vegetable garden, now it is
really urgent, a patriotic duty to do so. It will
help to feed your own family and in this way
increase the food supply.

DID YOU ANSWER THE LETTER.

We have just sent out several thousand letters
to our readers. In the letter we promised you
a new and larger paper—well—here it is.

We seldom refer to personal matters of this
kind in our paper, but we think the conditions
justify us in urging you to answer the letter.

Many of our readers are doing so, about seventy
five to a hundred each day, during the past week.

The making of all these improvements takes
money and we certainly will appreciate your
prompt reply to our letter. We are going to
give our readers the best dollar's worth of read-
ing they ever had, during the coming year.

PRESIDENT WILSON'S APPEAL

President Wilson has made a personal appeal
to his fellow countrymen; to every American
citizen, man, woman, and child to join in making
a success of the war we have just entered.

We have printed that part of his message which
appeals to the farmers and it should encourage
every one to know that he "will be serving the
country and conducting the fight for peace and
freedom just as truly and just as effectively as
the men on the battle field or in the trenches."

He places a great responsibility upon the
farmers of this country. With them rests the
fate of the war and fate of the nation. Our suc-
cess in great measure depends upon an abundant
harvest.

Read the message, then re-read it, and let us

act upon his appeal and show the world the
strength of a Democratic form of Government.

HOW BANKERS AND BUSINESS

MEN CAN HELP

We are experiencing an unusual spring this
year. The season is very late and farmers are
working day and part of the night to put in their
crops. On top of this comes the call to produce
a greater food supply. Many of our farmers do
not have the money for seed or extra help in
order to put in larger crops.

I have talked with farmers who will not go
to the banks and ask for money because they
are not willing to mortgage their farm to buy high
priced seeds and extra help. Many of them think
they are doing their share now. They would do
more if they had the seed and a little money to
hire help.

These is plenty of money and any one can get
it if he gives gilt edge security, but the farmer,
already doing his share, is not going to do what
he might do if some of the moneyed people will
not loosen up and help. Bankers and business
men can help by helping to buy seed and supply-
ing money for extra help necessary to do extra
work. Go to the farmer and offer him help; ask
him if he can not increase his wheat crop
provided you supply seed and hired help. Tell
him you will take your pay in wheat at the
harvest time. It will be better than money be-
cause wheat will help us feed ourselves and the
people of Europe.

Three farmers went to one of our local banks
and asked for five hundred dollars, willing to
sign a joint note, to plant ten acres of potatoes,
they were told they could have the money if
they furnished good extra security. How can
moneyed men expect farmers to plant additional
acreage as a patriotic duty, when seed cost such
a high price, if they are going to be so extreme
in their security. Let the man who has money
take a chance with the farmer. Work together
for the good of each other and the help of our
nation at this time.

JUST A LITTLE PERSONAL

Well—what do you think of the new Utah
Farmer. We have wanted to make this change
for a long time but it did not seem possible until
this issue. The change meant new equipment,
because the presses we were using were not
large enough to print the present size. Now our
printing department has a large modern press
with new equipment, new type, etc.

We are sure our readers will like the change.
We are able to give you twenty percent more
reading matter; thus we are able to serve you
better and at a time when it is most needed.
The farmer has a great responsibility in the pro-
duction of a greater food supply and we propose
to help in every way possible.

We want our readers to feel that this is their
paper and to know that we appreciate the loyal
support that has been given the Utah Farmer
for many years. We have confidence and pride
in the paper and enjoy the work.

It is our plan and purpose to give you the best
farm paper possible. To keep you in touch
with the modern ideas of agriculture. Experts
and practical men will assist us each week in
giving our readers "something worthwhile."

We want your good will and support, so that
we can make the new paper more helpful than
ever. Say a kind word to your neighbor about
the Utah Farmer.

For some time our advertising has been in-
creasing and we realized the need of larger space
in order to better serve both our readers and
advertisers.

During the past six weeks several thousand
names have been added to our subscription list.
This has increased the advertising value of our
paper. The cost of paper from which this issue
is printed, cost us more than double what a car
did a year ago.

Because of a greater number of readers and
increased cost of paper it will be necessary for
us to get a higher price for advertising space.

INCREASED ECONOMY AND HELP

One of the greatest factors in the effort to
increase the surplus food supply will be the
practice of increased economy. The American
people are the most wasteful people in the world
in our way of living. We have considered our
tastes and desires rather than the cost or
economy.

A great saving can be made in our food stuff
supply if we were to use the whole wheat flour
in place of the High Patents and other kinds.
Experts tell us that we can make seven loaves
of bread from whole wheat in place of six we
are now making. This would make an increase
of one-sixth in our food supply.

The serious food situation occurs in many
house-holds through lack of culinary knowledge
and skill. Experts from the College and De-
partment of Agriculture are going to give some
helpful suggestions and ideas along this line
which we plan to publish in each issue of our
paper.

It is our idea that the women in the home can
do as much to help feed the soldiers at the front,
by practicing increased economy as the farmer
or manufacturer who produces the food supply.

THE FARMERS' BATTLE

Our country is now at war, and it is going to
be the farmers' battle. On the third page we
give President Wilson's appeal to the American
farmers. Some people already realize the situ-
ation in which our country finds itself. Others,
however, do not seem to know that we are at
war, facing all the calamities which results from
war.

Our fight in this great conflict is far removed
from the trenches, but we have a problem just as
important—that of producing a greater food sup-
ply. The task is a big one under the unusual
conditions of a short season and such extremely
high prices of seed. It is our patriotic duty,
however, to plant every available foot of ground.
We should work unceasingly with intelligence
in order to feed ourselves and help feed our
Allies of Europe.

Our country is in a state of war and if the
armies are not well fed they cannot do their
part in the great fight and if we do not supply
the food and money that our Allies have said
are the most urgent needs at this time, they may
be weakened and all the horrors of a modern war
may be brought directly home to us.

From all reports there can be no possibility of
an over-production. Besides the patriotic duty
to increase our food supply there is the promise
of substantial rewards in the way of good prices
for all that is produced. The opportunity is
one of service and of profits. Our patriotism
should be above profits, but the possibility of in-
creased profits should stimulate our patriotism.
The question of high priced seed and extra labor
should not stop the farmers in planting increased
acreage. The Government and civic forces are
working together in every way possible to meet
this condition and help the farmers, and we be-
lieve that it will be solved in a way that the
farmer will be able to secure help, both financial
and labor.

The importance of good seed cannot be over-
estimated if we want to increase our production.
Better seed means better harvest. Secure the
best seed possible so that the extra care and
cultivation you will give it during the coming
year will bring profitable returns.

Be sure that every precaution is taken to
eliminate diseases and pests of all kinds. Treat
your oats and potatoes, etc., with the greatest
of care before planting so that you will not be
disappointed in a good stand.

Right now is the time to prepare for the great
war, and the better we are prepared the sooner
it may end. In Utah our crop prospects are the
best of any in the United States. This should
stimulate us with a greater effort for we have an
opportunity to serve ourselves and help our
country.

It is the farmers' battle and we are sure the
people of our State will do their part.

GROWING POTATOES FOR PROFIT

(Continued from page 3)

grower the question of plant food is not as important as in the East, where the plant food requirements of the crop are largely supplied by chemical or commercial fertilizers. Most of the irrigated lands of the West seem to be well supplied with phosphorus and potash, but are somewhat lacking in nitrogen, and also in organic matter. This lack is abundantly cared for by the alfalfa roots and stems. For the present at least the irrigation farmer's chief concern is that of establishing a definite crop rotation system whereby the necessary amount of two, three, or four year old alfalfa sod will be available for the potato crop.

Good Seed Liberally Used.

The importance of good seed can hardly be over-estimated, and it is to be regretted that so few potato growers really appreciate the necessity of using good seed. I would define good seed as consisting of tubers produced by healthy, vigorous, and productive plants, somewhat immature and not too large. If I could have my choice I would select tubers from 2½ to 4 ounces in weight and would cut them in two lengthwise if they were of a roundish shape and crosswise if long and rather slender. The important thing to keep in mind in cutting seed potatoes is to cut the tuber in such a way as to give blocky sets, each of which have at least one strong eye. In cutting sets from large tubers I prefer to cut to a two or three eye piece or a 1½ to 2 ounce set.

With rows 3 feet apart and 1½-ounce sets spaced 1 foot apart in the rows it requires 14,520 sets or 1,360 pounds of seed per acre. Two-ounce sets would involve the use of 1,915 pounds of seed per acre.

In planting, the aim should be to get as nearly a 100 per cent stand as possible. Maximum yields can be se-

cured only when practically perfect stands are secured.

Good Cultivation.

For best development of the potato plant the soil during the early part of its growth must receive good tillage. During the period between the planting of the crop and its appearance above ground the weeds may be kept down and the moisture conserved by going over the field with a weeder or a light spike-tooth harrow with its teeth slanted backwards. As soon as the plants are up sufficiently well to outline the rows they should receive a deep cultivation, 8 or 10 inches if possible. Subsequent tillage should gradually become shallower so as not to injure the roots of the plant.

In ridging up the rows the object should be to obtain as broad a ridge as is consistent with the maintenance of an irrigation furrow. The broad, more or less flattened ridge does not dry out so quickly and the soil remains cooler which is a distinct aid in the preservation of the health of the plant.

Intelligent Application of Water.

There is no other feature connected with the growing of potatoes under irrigation on which there is such a diversity of practice as on that of the application of water. Some growers practice what is termed "irrigating up the crop." That is, when the soil moisture is deficient at planting time and germination is liable to be slow and uneven, water is applied. Usually, however, where special care has been taken to conserve the soil moisture in its preparation for the crop there is sufficient to insure good germination. When the soil is very deficient in moisture in the spring, it is a good practice to irrigate before preparing it for planting.

There are other growers who prefer to delay the application of water until the tubers are set, in the belief that if applied before this date it has a tendency to promote vine growth and to delay or interfere with tuber development. Others believe that water should be applied whenever the plants require it. There are also many theories regarding the liberal or somewhat restricted use of water when irrigating; that is, some believe in frequent and rather light applications while others advocate less frequent but more thorough soaking of land. Over-application of water are usually attended with more or less danger to the crop in regions where summer rains are likely to occur unless the land has excellent drainage.

Our own observation would lead us to recommend the application of water in sufficient amounts to thoroughly moisten but not to saturate the soil whenever in our judgment the health of the plants required it.

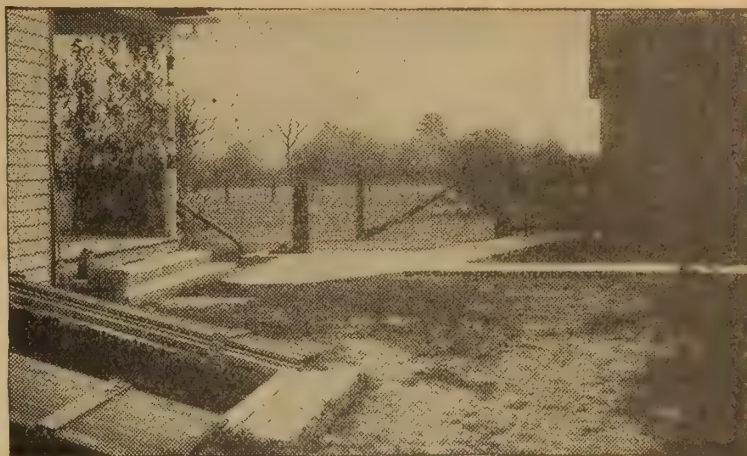
Experiments have demonstrated that the potato when grown under semiarid conditions requires over 600 pounds of water to produce 1 pound of dry matter. This indicates a rather high water requirement for the successful production of a crop.

In the application of water the question is often asked as to whether it is better to run the water through a deep and narrow ditch or a broad and rather shallow one. While the superiority of either practice is not definitely established our preference is for the deep and narrow furrow because it places the water below the tuber bed and makes it possible to apply water without soaking the tubers.

TAKE NOTICE.

Sunday Excursion Rates on Salt Lake Route.

Excursion tickets on sale each Sunday, April 29th to Sept. 30th as follows: From Salt Lake City, Murray, Sandy and Draper to Provo and return, \$1.25; Springville and return, \$1.50; Spanish Fork, \$1.75; Payson, \$2.00. From Payson to Salt Lake and return, \$2.00; Spanish Fork to Salt Lake and return, \$1.75; Springville to Salt Lake and return, \$1.50; Provo to Salt Lake and return, \$1.25; Pleasant Grove to Salt Lake and return, \$1.25; American Fork to Salt Lake



Concrete walks keep a lot of mud from being tracked into this home.

A Simple Concrete Job

Women like a concrete walk from house to barn. It keeps mud out of the house. Concrete steps and a concrete slab around the pump are also simple, inexpensive and permanent improvements.

You can easily build these yourself. The only materials necessary are portland cement, sand, and pebbles or broken stone. Your local dealer has the cement. You can probably dig the sand and pebbles on your farm or nearby.

Concrete is the material used for city sidewalks because it lasts. You want your walks to last, too.

Our free illustrated Bulletin No. 137 will tell you how to build concrete walks, concrete feeding floors and barnyard pavements. Write for your copy.

PORTLAND CEMENT ASSOCIATION

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CUTTER'S BLACKLEG PILLS

"California's Favorite" for nearly 20 years

For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Scrums only."

Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.

Single Pills may be used for ordinary and range stock.

Double Pills should be used for pure bred and high grade stock.

Use any Injector, but Cutter's simplest and strongest.

Prices:
10 dose pkge. Single pills \$1.00
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10 dose pkge. Double Pills 1.50
50 dose pkge. Double Pills 6.00
Cutter's Pill Injector.... 1.50

Insist on Cutter's. If unobtainable, order direct.

Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

The Cutter Laboratory, Berkeley, Calif.

The Cutter Laboratory of Illinois, Chicago
Eastern Agent

FOR

LOS ANGELES

THE MECCA,

of Southern California

TAKE

THE SALT LAKE ROUTE

Three Good Trains, Daily.



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Excursion tickets, with long limits and diverse routes, on Sale daily.

For Attractive California Literature, Address

Wm. Warner, A. G. P. A. 10 East 3rd So. Salt Lake City, Utah.

and return, \$1.25; Lehi to Salt Lake and return, \$1.25; Lehi Junction to Salt Lake and return, \$1.25. Good returning on date of sale only.

Good annuals for cut flowers are marigolds, sweet peas, calliopsis, asters, schibiosa, petunias, snapdragons, nasturtiums, and zinnias.

HOME

HOW TO SELECT FOODS How the Housekeeper Can Provide a Ration That Will Give the Best Returns for the Money Spent.

Adults and children must get several different substances from the food they eat or they will miss something which is essential to bodily efficiency and health, according to the nutrition specialists of the United States Department of Agriculture. The housewife, therefore, who plans her meals or attempts to save money on food without some knowledge of these substances and of the five simple groups of foods which supply them is very liable to omit from her meals some food essential for the growth of children or necessary to supply the family with the energy they need for their daily tasks. Attempted economy which entirely omits certain foods may well prove a very poor investment because of its ultimate effect on the well-being of the household. Price, individual preference for certain foods, and even the fact that hunger is satisfied after a meal, are not safe guides. Tomatoes at ten cents apiece in winter are no more nutritious than they are at five cents a quart in summer. A child might crave much more sugar than would be good for him. A bulky diet

of potatoes or bananas might make a person feel he had eaten enough, but would not furnish him with the elements that his body needs.

To plan out meals in the interest of family efficiency and economy at the same time, the housewife fortunately does not need to do elaborate sums in calories or to have any intimate understanding of such terms as "protein" and "carbohydrates." All she needs to do is to classify the food she uses into five simple household groups.

The substances which the specialists find are needed in the daily diet to maintain the body may be grouped under seven heads: Mineral substances, protein, starches, sugars, fats, cellulose, and certain little-known but very important growth-stimulating substances.

A Day's Food Requirements.

That these essential substances are not difficult for the average housewife to provide is shown by the following combinations which the specialists believe indicate the daily food requirements of normal individuals:

For a Man.

A man who does fairly hard muscular work would be likely to get the food which his body needs if supplied daily with such a combination of foods as the following:

One and one fourth pounds of bread (having about the same food value as 1 pound of such cereal preparations as wheat or rye flour, oatmeal, corn meal, rice, etc.).

Two ounces, or $\frac{1}{4}$ cup, of butter, oil, meat drippings, or other fat. Two ounces, or $\frac{1}{4}$ cup, of sugar; or one-third cup of honey, or sirup, or an equivalent amount of other sweet.

One and one-fourth pounds of food from the following: Fresh fruits and fresh or root vegetables.

Twelve ounces of food from a class which may be called "meats and meat substitutes;" that is, moderately fat meats, poultry, fish, eggs, cheese, dried legumes (beans, soy beans, peas, lentils, cowpeas, and peanuts). Milk also belongs among these foods, but because of the large amount of water it contains, half a glass, or 4 ounces, of it would be required to equal an ounce of any one of the others.

A man who works hard out of doors all day probably would need more food than this, and he who sits all day at his desk would need less. The amounts given are suitable for a man who, like a salesman in a store, walks about more or less and does more or less of such work as lifting.

For a Family of Five.

A family consisting of a man and a woman, who do moderately hard muscular work, and three children—say, between 3 and 12 years of age—would get the food they require if supplied daily with—

Four and one-half pounds of bread, having about the same food value as 3 pounds of wheat or rye flour, oatmeal, corn meal, hominy, or rice; or about $2\frac{3}{4}$ pounds of such cereals and 5 or 6 medium-sized potatoes.

Three-fourths cup of fat (butter or butter with oil, beef drippings, or other fat)—a weekly allowance of $2\frac{1}{2}$ to 3 pounds.

A little more than 1 cup of sugar, or a weekly allowance of 4 pounds; or an equivalent amount of some other sweet, such as $1\frac{1}{4}$ cups of sirup or honey a day, or $\frac{3}{4}$ pound of dried figs or raisins a day.

Four pounds in all of fresh fruits and fresh or root vegetables.

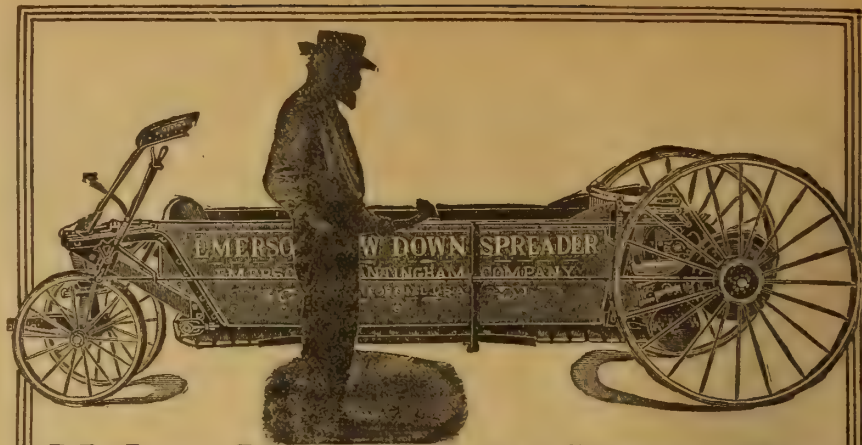
One of the two following, the choice depending on the age of the children.

Three quarts of milk and 1 pound of other foods taken from the meat and meat-substitute group.

Two quarts of milk and $1\frac{1}{2}$ pounds of other foods taken from the meat and meat substitute group.

Cereals Used Freely.

In these combinations of food, it will be noted, bread and other preparations of cereal food are used as freely as they conveniently can be, without making the ration one sided



Makes It Twice As Easy—The EMERSON Low Down Spreader

NOW you need no longer waste energy lifting manure into the old-fashioned spreader with a box as high as a wagon. Just why the world has been content to waste all this energy all these years no one knows, but you don't have to do it any longer. The EMERSON Low Down Spreader reduces the work at least 50 per cent—there is no lost motion. Loading from either side or rear, you lift your forkfuls only a little over half as high as with the old-fashioned spreader—and it's the last half that takes the most muscle.

Point by point, feature by feature, the EMERSON is as far ahead of other spreaders as the low down principle is ahead of the old style. Let us prove it to you. Send your name for our new booklet of facts. Read why the EMERSON Low Down is

Easy to Operate, Easy to Load, Easy to Unload, Easy Running

Beater is all metal, can't warp, split, rot or check. Teeth are square steel, chisel pointed, set in spiral form—so they cut, tear, shred and pulverize all the manure and spread it evenly regardless of how bed is loaded.

Endless apron—each slat runs on its own wheel—not dragged over stationary rollers. Worm gear drive runs in bath of oil. Foot lever controls driving mechanism—hand lever changes quantity spread.

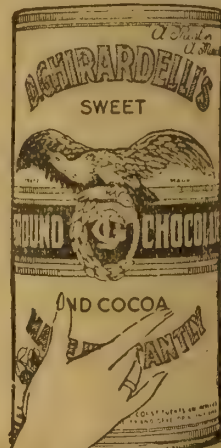
Main drive wheels 50 inches high—main frame sills are steel channels 3 inches wide, 5 pounds to the foot. The EMERSON Low Down is practically an all steel spreader—the only parts not steel are—apron slats, box sides, pole and whippetrees.

You should know more about the EMERSON before you select any spreader. Call at our store and we will be pleased to show it to you. 31456

MILLER-CAHOON COMPANY

Murray, Utah.

Idaho Falls, Idaho



there's Health in this Can

Chocolate is an appealing food—perhaps the most delicious of all foods. It is likewise nutritious food—perhaps the most nutritious.

When you buy Ghirardelli's Ground Chocolate you get the grand prize winner, a chocolate of finest quality packed in a hermetically sealed can that holds all the Ghirardelli goodness in and keeps all outside evils out.

You buy Health
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Ghirardelli's Ground Chocolate

Since 1852

D. GHIRARDELLI CO.

San Francisco

ALFALFA SEED

FOR SALE

Best Grade.....14c
Good Grade.....12½c
Good Grade Seed somewhat dark.....10c
Less than full sacks ½c
lb. higher. All prices f. o. b. Oasis or Lynndale, Utah. These three grades all run high germination test.

Cash must accompany the order.

A. A. HINCKLEY
Hinckley Utah

Now is the time to subscribe for the Farmer.

A Bag of Sugar

Every housewife should order a bag of sugar. If it is not convenient for you to order a 100-pound bag, order a 50, 25 or a 10-pound bag.

Specify—

EXTRA FINE Table and Preserving Sugar

ABSOLUTELY PURE

Made by Utah-Idaho Sugar Company. It's more economical to buy sugar by the bag, and sugar is essential as a food; no other food is more important.

Any dealer will supply you with this pure sugar.

Made by

**UTAH-IDAHO SUGAR
COMPANY**

or unattractive. A diet equal in nourishment might be planned with less cereal, but this would make it necessary to increase the amounts of more costly foods, such as meat, fruits, and vegetables.

Cereals can be used freely without making the diet monotonous if they are served in a variety of forms and combined with other nutritious or flavoring materials, such as meat, cheese, onions, celery, tomatoes, and other vegetables and dried, cooked, or fresh fruits.

Sample Meals for a Family of Two Adults and Three Children.

The food materials indicated as being required may be combined into three meals in many ways. The following meals are given not because they are recommended above many others that might be prepared, but simply to show that such foods can be combined into dishes commonly used in American homes. These meal supply during the day all of the eight essential substances and also provide flavoring and condiments which, while not important as sources of nourishment, add to the attractiveness of certain foods.

The Give-and-Take is Free-and-Easy

President Suspenders
for comfort

and long service. The "give and take" feature adjusts with every movement of the body freely and easily.

Dealers everywhere sell Presidents at 50c. Ask for them by name. Look for "President" on the buckle. Accept no others—WE refund your money—if they don't please you.

PRESIDENT SUSPENDER CO.
Shirley, Mass.



For the invalid



as well as those in perfect health

Baker's Cocoa

is an ideal food beverage,

pure, delicious and wholesome.

Walter Baker & Co. Ltd.
ESTABLISHED 1780 DORCHESTER, MASS.



Breakfast.
Fruit, 1 1/4 pounds of fresh fruit (equivalent to 3 medium-sized oranges, 5 small apples, or a quart box of strawberries) or 3 or 4 ounces of dried fruits (equivalent to 10 or 12 dates or 4 or 5 figs).
Cereal breakfast food, 4 ounces before being cooked, or about 1 1/2 pints after it is cooked. The equivalent in food value in puffed or flaked ready-to-eat cereals would be 5 to 6 cups.
Milk on cereal, 1/4 cup to each person.
Sugar on fruit, on cereal, or in coffee, 2 1/2 level tablespoons or 1 1/4 ounces.
Bread, 8 slices, or 8 ounces.
Butter, 1 1/4 ounces, or 2 1/2 cubic inches.
An egg, or 2 ounces of meat, fish, or poultry for each older person, and a glass of milk for each young child.

Dinner.
Meat, or fish, 1/4 pound per grown person; or, for each child, an egg or a glass of milk.
Potatoes (5 medium sized), 1 1/4 pounds.
Another vegetable (turnips, spinach, corn, cauliflower, or other), 1 pound.
Bread, 8 slices, or 8 ounces.
Butter, 1 1/4 ounces, or 2 1/2 cubic inches.
Steamed apple (or other fruit) pudding. (Ingredients: Two cups flour, 2 tablespoons butter, 3/4 cup milk, 4 apples, 1 tablespoon sugar.)
Sauce. (Ingredients: One-half cup sugar, 1 1/2 tablespoons flour, 2 teaspoons butter, 1/4 cup water, flavoring.)

Supper.
A gravy made out of 1 pint of skim milk, 1/4 cup flour, 2 level teaspoons butter, and 4 ounces salt or smoked fish (just enough for flavor). To this can be added the egg yolk left from the frosting of the cake. (See below.)
Rice, 8 ounces, or 1 cup, measured before being cooked.
Bread, 8 slices, or 8 ounces.
Butter, 1 1/4 ounces, or 2 1/2 cubic inches.
One-half of a cake. (Ingredients for whole cake: One-fourth cup butter, 1/2 cup sugar, 1 egg, 1/2 cup milk, 1 1/2 cups flour, 2 1/2 teaspoons baking powder.) Frosting made with 1 egg white and 1/4 cup sugar.
Why the Various Substances Are Important.

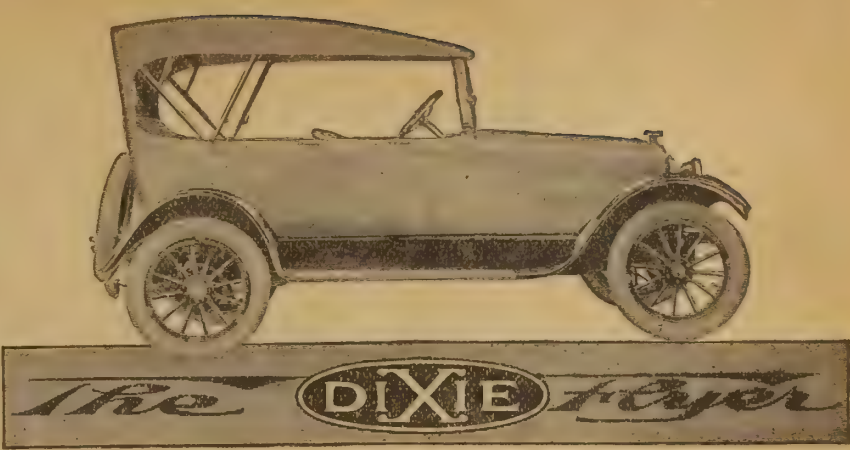
The mineral substances, such as lime salts, compounds of phosphorus, iron, and others, are supplied largely by vegetables. They serve the body as building material, tend to counteract acidity in the body tissues and fluids and are useful in other ways. Vegetables and fruits, therefore, should not be neglected in the diet, especially as they supply also another substance, cellulose, the framework material of plants, which gives bulk to the diet and tends to prevent constipation.

Protein, a substance supplied by meat or meat substitutes, including milk, is a very important fuel and body-building material. It provides an element—nitrogen—needed to form body tissues, not only during growth in childhood but also to make good the wear and tear of use in persons of any age, thus keeping the body in repair. Absence of foods supplying protein would give a diet lacking in body-building materials.

Different kinds of starch, sugar, and fat are important fuels of the body.

The last group of substances is present in very minute quantities. These minute quantities are believed, however, to be vitally important to the body because of their effect in promoting growth in the young and in keeping the body well.

GOOD EXAMPLE
Once a very youthful chicken-fancier had in his possession a couple of bantam hens that laid very small eggs. He finally hit upon a plan to remedy this.
When the lad's father went the next morning to the chicken house he was surprised to find an ostrich egg tied



IT'S the difference in performance which will decide you in the selection of your car.

To the Dixie Flyer we have brought those admirable qualities in performance which have won for the Kentucky Thoroughbred the admiration, respect and homage of all:

- Off at full speed,
- Able and sure to go the distance *quick*,
- Staunch and sound in every quarter,
- Easy riding.

Recognizing, too, that the luxury of this season is the essential of next, we have ever looked forward, always giving the most for the least.

When you say, "The convenience I want in my car is—" you will find it already in the Dixie Flyer, and you will find more usable service-value than in any other car of its price class.

See the Dixie Flyer dealer in your town for a demonstration. Write for handsome catalogue, just off the press.

DIXIE MOTOR CAR COMPANY LOUISVILLE, KY.

Distributors:
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Murray, Utah.
Salt Lake City, Utah
Idaho, Falls, Idaho.

V. G. PURINTON
263 Broadway,
Denver, Colorado.

Touring Car \$845
Roadster \$845
Sedan \$1275
(At the Factory)

At the Factory
\$845

An Honestly Good Bread

It would be impossible to give you the excellent flavor and goodness possessed by—

ROYAL BREAD

The bread that made mother stop baking

if we did not use the highest quality and purest ingredients. We could not afford to have a single loaf fall below the ROYAL standard. We have made Royal Bread so good that hundreds of dealers are supplying thousands of homes with it every day. Order it from your grocer.

Royal Baking Co., Salt Lake City, Utah



to one of the beams and above it a card with this notice.
"Keep your eye on this and do your best."—New York Times.
"What's in a name?" Many a man who would die of humiliation at having to live in a six-room cottage will go out and boast to the world about his new six room bungalow.



Economical Feed For Cows

Right now, with the scarcity of hay, owners of cows and other stock should take advantage of the economy and high food value of—



Stock Feed

This is a scientifically balanced, highly nutritious mixture of oats, barley, cottonseed meal and beet sugar molasses.

Order a few sacks of "Sunripe" from your dealer. If he is not ready to supply you, write direct to Utah Cereal Food Company, Ogden, Utah, giving name of dealer.

Utah Cereal Food Co.
Ogden, Utah



UTAH WILL DO HER PART TO INCREASE OUR FOOD SUPPLY (Continued from page 1)

vegetables from the vacant lots and city gardens.

The canning, drying and preserving of vegetables and fruits, storage of eggs and curing of meats was urged. Many of the college girls have volunteered to give directions in the canning and preservation of foods. Right here it might be well to give in full the report of the committee on food conservation.

"Resolved, That the wild fruits and game be conserved, and that the unnecessary slaughtering of fish, wild game, or other animals fit for food be condemned.

"That families abstain from the use of spring lamb, veal and spring chicken.

"That as far as possible, every family use food produced by themselves, or give preference to home products.

"That families and communities abstain from elaborate entertaining.

"That economy in the preparation and the service of food be observed.

"That the vice of overeating from mere habit or pleasure be overcome.

"That in addition to regular household canning of fruits, vegetables, meat and eggs, a special exertion be made to preserve all surplus foods by canning or drying.

"That each housekeeper make a definite estimate of the amount of food and clothing necessary to provide her family for one year.

"That the municipality shall enforce the law for separate receptacles for food wastage, and shall dispose of this wastage to our public institutions for the use of cattle, pigs and chickens.

"That simplicity of dress and conservation of materials be observed.

"That expenditures for clothing be minimized by making over or renovating discarded apparel.

"That women of our state adopt a standard costume suitable for business, work and street wear.

"That a woman home demonstrator be appointed in each county of the state to supervise and assist in the carrying out of the aforesaid details of conservation and preservation.

"That each county be asked to provide funds to pay for the services of a woman home demonstrator to supervise and assist in the execution of these plans."

The sentiments of the meetings as expressed in various forms by speakers from different counties, were crystallized into resolutions adopted by the evening session. These resolutions point out the seriousness of the food problem, and the necessity of feeding the nation's allies in the world war. Utah senators and representatives were urged to secure the passage of all laws necessary to authorize the federal authority to provide for the production, storing, marketing and distribution of all kinds of food, and to fix maximum prices at which foods may be sold during the period of the war.

While the patriotism of young men who enlist is appreciated, their services are needed more now on the farm and in productive labor than in the defensive forces. Theoretically it is hoped to send city boys and older men to the farm to take the place of these boys, but they are usually inferior substitutes for farm labor, it was said. It is held to be the duty of every man to perform the work to which he is best adapted, and men are urged to follow the president's advice. Farmers are urged to pay as high wages as possible, because of the high prices they will get for crops. Idleness is condemned. Every man, woman and child is urged to do his full duty, and all can help win the fight. If they do not go to the battlefield, they can go to the potato field and there do their part. Discipline should be enforced if necessary to force the idler to do his part, and not eat the bread of the laborer.

Other recommendations contained in the resolutions are:

That a labor bureau be established in each county and city where all

High Prices Will Continue during next year.

It will be to your interest to produce the biggest crops possible, both in field and garden. Our catalogue tells all about Vogeler's Purity Seeds.

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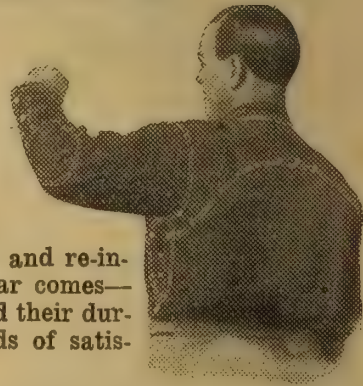
Vogeler Seed Co.

SALT LAKE CITY, UTAH

Solve The Shirt Problem

By Buying "MADE-RITES"

You will learn what comfort and service a real work shirt can give.



They are made strong all over and reinforced where the wear and tear comes—double elbows, double yoke, and their durability is attested by thousands of satisfied wearers.

JOHN SCOWCROFT & SONS CO.

Also makers of Never-Rip Overalls and Work Clothes.

Ogden, Utah.

those who ought to be employed may be listed that employers may find the help they need.

That farmers refrain, as far as possible, from slaughtering female animals which may be fit for breeding purposes, in order to avert a terrible shortage of live stock. Curtailment by slaughter of food animals is urged.

That economy in the use of potatoes is to be observed, and it is urged that seeds be treated before being planted.

That more land be planted with potatoes.

That the Utah senators and representatives urge legislation prohibiting the use of grains for the manufacture of intoxicating liquors and malt beverages.

That the governor and other public officials who may have the authority provide for an increase in the crops by causing the immediate breaking up, seeding and cultivating of thousands of acres of state lands, and utilize in this work the labor of the state prisoners, that the state prison may be

converted into a profitable institution. Farmers and seedmen are asked not to raise prices.

That state and national officials realize the importance and necessity of the making of loans by the farm loan banks to the farmer that the latter may secure the seed and machinery necessary to the cultivation of his land and its harvesting.

That the banks take advantage of the great opportunity offered, by financing the farmers until harvest time to show their generosity and patriotism, helping the farmers through the period of excitement and depression.

That a bureau of publicity be established to provide for the publication and fullest circulation of all data of value to the farmer; and for the holding of meetings, conventions or other assemblies throughout the state for the advancement of the agricultural interests.

That an appropriation be made by congress to provide for food production and conservation of the country.

"Added to the horrors of war, we are seriously threatened with famine, and it becomes us, as it did the noble band of pioneers who came to these valleys 70 years ago, and who so nobly, patiently and heroically fought the cricket, the frost and the drouth, to put forth our every effort, to wisely, judiciously and humanely, but rigidly, economize in the use of every product that can be used for the sustenance of life, and to consecrate ourselves to the mighty and sacred task that lies before us and the nation."

THE BEAUTIFYING OF HOME GROUNDS

(Continued from page 3)

a rockery. These rockeries can be made either on a steep bank or standing alone on a corner of the lawn, etc.

To make a rockery use weather-beaten boulders and stones of all sizes. Place them on a steep bank as irregularly as possible, the spaces between being filled with good soil in which various plants suitable for this purpose can be planted. If the rockery is to be on level ground, place a heap of soil where it is to be located. Then rocks and boulders are placed irregularly on the soil. If the boulders are long in shape, they should be put up on end. After all the rocks have been placed in the desired position, fill in between with good soil. After the plants have been planted, the rocks will be seen projecting up at the right angles between the variation of plants and flowers.

The principal rule to observe in laying out the grounds is that of an open appearance. Shrubs, bushes, or flower beds should not be planted on the lawn or along the walks. Nothing

should be planted on the lawn, except a lawn tree here and there, which, under certain conditions, will be very effective. The flowering bushes should be arranged in groups along the fence lines or around the foundation of the buildings or some corner of the lawn as the case may be.

In arranging the bushes for planting it is of great importance that the lower growing shrubs be planted in the outside row and the taller growing plants at the back or center of the group. The bushes should be planted irregularly with a distance of from four to eight feet according to the growth of the plants. By so doing one approaches nearest to nature, and this is the aim—that when the planting is completed and growing has reached maturity the appearance should be as natural as possible as if "they happened to be there." The soil between the bushes should be worked continually and kept loose and free from weeds.

If one is doing his own planning and planting of his layouts, it is advisable for him to draw his plan on paper. Sometimes we meet the argument "I do not need any plans; I have it all in my head." Such words are never spoken by professional artists of landscape gardening or landscape architects. If no specific plan is followed the layout will be a failure. Changes will have to be made sooner or later and these changes will cost much more than if plans were worked out in the first place.

To make such a plan diagram a complete map of the existing features such as buildings, old trees to be left on the grounds, etc. Obtain the right measurement of the ground space, location of buildings, and other existing features. Then mark the drives and walks on it and finally the groups for bushes and shrubs with the distance marked for every bush and tree.

When doing this planning the effect of the trees and shrubs when planted and grown into maturity must be taken into consideration. Try to indicate the objectionable feature which should be hidden, such as stables, and other structures, the view of the neighbor's backyard, etc. Plan the arrangement of the trees and bushes so that they will cover the objects desired to be hidden.

In planting groups and masses should be observed instead of single or individual arrangement. Many otherwise fine lawns have been ruined by this latter method. The natural effect is not given when shrubs are planted in single rows.

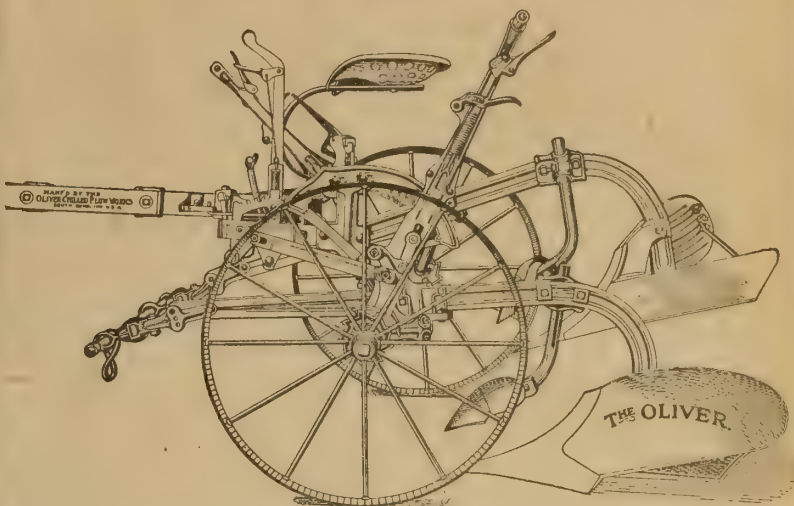
IRRIGATORS' QUERIES ANSWERED

By O. W. Isrealson, U. A. C.

Would a law of the kind which you suggest, have any other advantages than those mentioned in the last issue of the Farmer?

Yes, it is undoubtedly true that under the administration of an efficient Irrigation Board, the irrigated sections of the State would prosper greatly, since the possibility of litigation would be very much reduced, and the money thus expended under present laws, could be placed in proper physical development of irrigation systems, and would thus tend to amore economical use of the water supply. It is believed that the experiences of other states, particularly those of Wyoming, Nebraska and Oregon, substantiate this view; since irrigation development in those States has undoubtedly been very much facilitated by the systematic scheme of irrigation legislation. There are, of course, many other factors in connection with irrigation practice which should likewise be given attention. Particularly, one might call attention to the need of giving greater aid to new settlers, since under present conditions with high interest rates, it is quite difficult to get economic farming operations in the early years of any irrigation project because the first settlers do not have capital with which to properly develop their lands during the early years. In order to stimulate irrigation development in Utah, it is clearly necessary to consider all of these factors.

THE OLIVER TWO-WAY PLOW



The OLIVER No. 23 Two-Way Sulky with either Steel or Chilled bottoms.

You will find more distinctive features on the OLIVER Two-Way plow than can be found on any other similar plow on the market. It is recognized as the **lightest draft** two-way plow sold in Utah.

No wrench is needed to take the shares off. Both bottoms are adjustable for depth so that when the levers are in the same notch, the plows throw exactly the same furrow right and left. The seat can be leveled on side hills in a few seconds. In fact the many features on the OLIVER that cannot be found on other plows, should be seen to be appreciated. This is a late Spring. Use an OLIVER.

Sidney Stevens Implement Company

OGDEN, UTAH

Distributors for Utah and Idaho

SEEDS

Purity Brand

BEST BY TEST

Send Today For Our Big
FREE Catalog.

Vogeler Seed Co.

Salt Lake City, Utah.

THIS YEAR Above All Others

Every farmer knows what's before him this year. Never before was there such a necessity for efficiency, and precaution against loss of time and money as this season. That's why it's important to use—

Golden Harvester Machine Oil

to keep farm machinery in perfect condition. This smooth, highly refined farm lubricant keeps bearings cool and free from friction. One can will convince you.

Utah Oil Refining Co.

Refiners

Salt Lake City, Utah.

INCREASE YOUR GRAIN ACREAGE THIS YEAR!

We Still Have **RECLEANED** Stocks of

**SPRING SEED WHEAT
SEED OATS
SEED BARLEY
SEED RYE**

It is your duty as a patriotic citizen to plant every acre of your land. Grain will be high again next year and your crops will pay well.

**SEND IN YOUR ORDER NOW, WHILE GOOD
SEED IS TO BE HAD**

We also have complete stocks of all kinds of Grass, Clover, Garden and Field Seeds.

BAILEY & SONS CO.

Reliable Seedsmen

SALT LAKE CITY, UTAH.

LIVE STOCK

PROFIT IN USE OF

PURE-BRED SIRES

By John T. Caine III, U. A. C.

"The success following the use of pure-bred sires can be found in any part of the live-stock world." For centuries some of the sturdy men of Europe have put their life and brains into the improving of live-stock. This intelligent work, carried on often for generations by the same family, resulted in the development of practically all our pure breeds of farm animals. During the last hundred years energetic Yankees have been trying to build on this wonderful foundation. The great advantage in using pure-breds is that you get for a few cents the results of this untiring work of centuries. Instead of having to build up an ideal from scrubs you are privileged to pick out finished products to work with, thus starting your operations hundreds of years ahead of the man who uses mongrels. In the pure-bred, type is strongly fixed, and so the laws of heredity make the products fairly sure, while in the scrub all its guess work.

"The steady improvement noted in western cattle is due to the introduction on our ranges of good sires of the English beef breeds. The men who continue to use good beef bulls build up high class herds and get a premium on the market. This is working out so well that the most successful ranchers of the west are paying as high as \$600 per head in carload lots for range bulls. This would not be done by those careful men unless it had proved a profitable practice. There are a number of Utah breeders who each year get from \$5.00 to \$10.00 per head more for their cattle than their neighbors; and an investigation will show that the higher priced animals are from the herds in which pure-bred sires are used.

"The wonderful improvement of the horses in Utah has been due largely to the introduction of pure-bred stallions from Europe. Utah is a noted horse producing section, and the records show that there are more pure-bred stallions, in proportion to grades here, than in any other state in the Union.

"If pure-breds were not worth while, we would not be able to cite the following list of sales. These prove the value of good blood, as the purchase were made in most cases by practical men:

Flying Fox—Thoroughbred	\$187,500
Cayellene—Thoroughbred	150,000
Ormondo—Thoroughbred	150,000
Carnot—Percheron	20,000
Baron Buchlyvie—Clydesdale	47,500
Americus—Shorthorn	50,000
Harris Sale of Herefords	
144 Average	1,281
Golden Fern's Noble Jersey	25,000
Bag Apple Kerndyke 8th—	
Holstein	25,000
Rivals Lord Premier—Berkshire	4,050
Masterpiece—Berkshire	2,500

"These are a few instances of the tribute paid to good pure-bred animals by lovers of fine stock.

"Intelligent use of the improved pure-breds is the surest way to success in animal production."

THE MANAGEMENT OF

BROOD SOWS.

With wheat and barley selling at \$40 or more per ton, shorts at \$30, and other feeds in proportion, it is evident that the cost of wintering the sow has been materially increased. This situation emphasises the importance of the proper care and management of the brood sow in order that she may develop herself and farrow pigs of such a nature and in such number that she may be an asset to the farm.

It is usually considered that the sow must on the average raise at least five pigs in order to make any profit for the farmer. If this is true, and if the price of hogs in the last years has not kept pace with the ad-

vancing price of grains, as some farmers think, it becomes at once apparent that the sow must raise as many pigs now. As the margin of profit becomes less it becomes necessary to abandon the slip-shod methods and devote more attention to the care and management of the enterprise concerned.

As there are many methods of handling the sow during the farrowing period, it is difficult to outline a method and call it the best. However, there are in the main certain precautions that must always be taken into consideration if chances for heavy losses are to be avoided.

It is altogether too common to allow pregnant sows a free run of the horse and cattle lots, and to force them to occupy crowded quarters with a large number of nogs. Occasionally heavy losses result from such a practice and must be avoided if best results are to be expected. Brood shows should be allowed the run on a well drained lot by themselves where they have ample room for the required amount of exercise, and where they have access to a reasonably warm shelter, free from drafts,

with ample light, that is kept well clean and suitably bedded.

The feed of the brood sow during the period of pregnancy is of great importance, as she is not only maintain-

ing her body and, in the case of immature sows, making a growth, but she needs a large amount of protein and mineral matter from which to develop a large and vigorous litter.



THE Martin WAY

ONE OF A THOUSAND

"I never was a great friend of the shovel and since I have used the MARTIN, the shovel and I have entirely dissolved partnership." F. H. Lytle, Pioche, Nev.

DITCHES!

—Make the NEW and clean the OLD with the MARTIN Ditcher, Dyker and Grader. It makes or cleans irrigation or drain ditches up to 4 feet deep, any width. Builds dykes; grades roads.

Ditcher and Grader

is guaranteed to do more and better work than 50 men with shovels. Works in sand, clay, gumbo or rocks—wet or dry; on side hill or on level ground. Made in 2, 4 and 6-horse sizes.

All Steel—Reversible

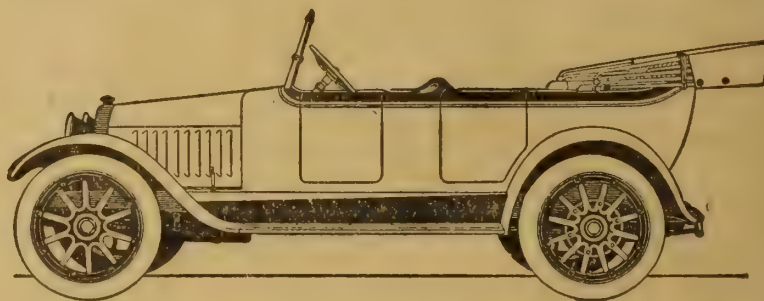
Adjustable for wide or narrow cut. No wheels, levers or breakable parts. Cost low. Up-keep nothing.

OWENSBORO DITCHER & GRADER CO., Inc.
803 Evans Block
Denver - Colorado

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Salt Lake Agents and Distributors.

Write us.



Chalmers 7-Passenger Touring Car—Price \$1350 Detroit

Daily You Will Find New Charms in This Chalmers

Some cars are noted for their comfort. Others are distinguished for their beauty. Others, for the strength of their chassis. But the Chalmers is an all around car. It has power, comfort, beauty, strength. All four.

Comfort

Picture a 122-inch wheelbase. With a front seat 41 inches wide, and a tonneau that extends from front to rear more than the reach of the average man.

Power

Imagine an engine that weighs 550 pounds. And turns up 45 horse-power. One horse-power for every 12 pounds of weight. Which with a total car weight of 3005 pounds means power ease on the hill. One horse-power for every 67 pounds of car weight.

Strength

Then turn over in your mind the extreme strength there must be in a car that is largely built of drop forgings, chrome nickel steel,

Lynite aluminum, crucible nickel steel and carbon steel.

All expensive metals. But placed in the Chalmers chassis for a specific purpose—to make it rugged and strong, though light in weight.

Such quality makes for durability and economy. For a thing made of good materials, always is well made.

Beauty

And a car made of the kind of materials you find everywhere in the Chalmers would be indeed incomplete without beauty and distinctiveness of lines.

See the high narrow radiator, the double cowl, the sweeping body lines, the finish that denotes hours of patience and care. And provides beauty, not for a day, nor for a month, but for years.

All the above means quality. The kind of quality you need in the car you buy and the kind of quality you GET in the Chalmers.

Touring Car, 7-passenger . \$1350
Touring Car, 5-passenger . 1250

Touring Sedan, 7-passenger \$1850
Roadster, 3-passenger . 1250

Limousine, 7-passenger . 2550
Town Car, 7-passenger . 2550

(All prices f. o. b. Detroit.)



Chalmers Motor Company

Detroit, Michigan

Dairy by-products are always in place as feed for brood sows. It is not well, however, to expect a sow to do well by herself and litter on dairy by-products alone, or even on dairy by-products and alfalfa hay. This ration is too bulky as those dairy by-products contain about ninety per cent of water. If the amount of dairy by-products is out of proportion to the grain fed much of its feeding

value is lost. For brood sows having access to alfalfa hay it is not well to allow much more than three pounds of skim milk to each pound of grain fed. It is better to reduce it than to raise it above that amount.

Alfalfa hay of a high quality, which may be supplied in a rack, is always in place for brood sows and, indeed, is very necessary to lower the cost of carrying her through the winter.

In the alfalfa hay we not only get a large amount of calcium which is so essential and which is deficient in wheat, bran, shorts, and barley, but we get a large amount of protein of the right kind. She must not be expected, however to live on alfalfa alone as that is too bulky. It should be supplemented with a small allowance of concentrates daily. This may be in the form of barley, wheat, shorts, etc., or better than those alone is a mixture of barley and shorts, for instance in equal parts. Tankage may be fed to advantage in small quantities. If 60 per cent Digester Tankage is used, it is not necessary to feed more than one part of tankage to every twenty parts of the mixture when the sows have free access to the alfalfa hay. The sows should not be fat but they should be kept in a vigorous and thrifty condition.

A few days before farrowing, the sow should be isolated and placed in the pen in which she is expected to farrow in order that she may become accustomed to her new quarters. In confining a sow in a small pen however, her exercise is necessarily reduced, and unless her feed allowance is changed to one of a laxative nature she may become constipated, a condition which invariably gives rise to a feverish condition causing restlessness while farrowing, which is very often the cause of her killing the pigs. To forestall this condition a sloppy mixture of 2 parts rolled oats or rolled barley, 2 parts shorts, and 1 part bran may be used. This allowance may be made after isolating the sow and up to within 15 hours prior to farrowing. At this time all feed had better be kept away allowing her only water which should be lukewarm for best results.

During farrowing it is well, and almost necessary, for an attendant to be present. In cold weather it is a good plan to have at hand a box or basket which is warmed by means of a few hot bricks that are covered with straw. In this box the pigs may be kept till they are dry and ready to nurse. They may be kept here till her fever has subsided, allowing them however, a chance to nurse every hour. This extra attention may sometimes save the entire litter, and in almost every case saves one or more pigs.

It is a commendable plan to keep the feed away from the sow for about twenty or twenty-four hours after farrowing. This time added to the fast before farrowing may seem to be too long. On the average it is not too long. Only occasionally will it be observed that the sow will crave anything before the end of that time. If such is the case, however, she may be allowed a sloppy mixture of shorts. Water must be allowed during this fast, and preferably in a lukewarm condition.

Great care must be exercised in getting the sow "back on feed" after this fast, when she again becomes normal. It is a common tendency to make too big an allowance for her too soon after she farrows. In this connection it may be well to recall that sows during the lactation period have the same tendency as dairy cattle, namely to convert their surplus feed into milk. If too liberal a feed is allowed just after farrowing the young pigs may not be able to take all the milk that she produces and trouble may result. This trouble may find expression in udder trouble but more commonly the trouble will be found with the pigs taking the milk, owing perhaps, in a measure, to the possibility of getting too large a quantity, and very likely to the change that takes place in the milk under such conditions. Begin with light feeding after farrowing and increase the al-

lowance slowly and gradually for about ten or twelve days when, under normal conditions, the sow should be back on full feed. This method not only reduces the possibilities of udder trouble in the sow, but it insures in a

large measure against digestive disturbances in the young pigs. (An article on the "Feeding of the Sow and Litter" will follow in another issue of this paper.)—J. E. Norby, Department of Animal Husbandry.

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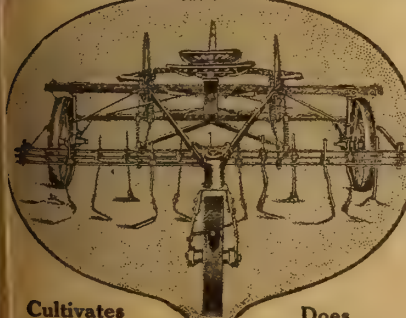
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If you want to beat the drought, Culti-Pack your fields after plowing, then again after seeding to firm the soil about the seed, and finally use the Culti-Packer on the wheat, corn, oats, etc., until it begins to joint.

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LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

50 acres of the finest farm and garden land in the west. Located at Elberta, Utah. Will make a very suitable place for the man that wants a small farm at a reasonable price. Well adapted to raising any of the farm products, garden truck, alfalfa and beets. Within a short distance of two good mining camps affording a fine market for garden vegetables. On railroad giving excellent shipping facilities. Good schools adjacent. Prior water right at \$1.00 per acre if used. Look at this before you make a selection. Write or see

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FOR SALE

640 acres with 168 acres wheat, 50 acres alfalfa, well, fence, 6 horses, harnesses, implements, etc.

800 acres, 320 pasture, 235 acres in wheat and some horses, etc. Will sell part or all. Price and terms reasonable. For further information, write
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GOOD LAND FOR SALE

I have two twenty-acre tracts, two forty-acre tracts and a ninety-acre tract of land on the west side of Salt Lake Valley, under the new canals, for sale this spring. Prices range from \$80 to \$125 per acre with water. Easy terms for purchasers. Last year I sold more than 2,000 acres of this land to residents of Salt Lake County. Please write or leave inquiries with the Utah Farmer, Salt Lake City, or Lehi office. Francis W. Kirkham.

\$3,750.00 takes a 50 acre farm at Elberta, Utah. Fine Soil, very suitable for growing Alfalfa, Fruit, Beets, Grain, Garden Truck or any farm products. Good water right at a very reasonable rate. Adjoining to good schools and is located on railroad. Suitable terms can be arranged. This is a real buy for the man that wants a small farm at a good price.

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In Boxelder County, 50 miles from Brigham City, 960 acres of land, 800 under cultivation, 400 in fall wheat, about 40 alfalfa, 12 head horses, harnesses, machinery, buildings, well and equipment. Price and terms reasonable. For particulars write

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These Idaho properties are located in one of the finest farm districts and are all close to open range.

160 acres all in cultivation, about half in alfalfa and clover; good 8-room house, barns, cattle sheds, etc.; fenced and cross fenced; excellent decreed water right. Price \$9,500 including all machinery, about 20 head of cattle and 6 horses.

160 acres, close to railroad station, all in cultivation; has good house, barn blacksmith shop, three granaries, sheds, cattle barns, etc. Price only \$4,500.

320 acres, about half in cultivation, with some alfalfa. 160 acres deeded, remainder homestead; a fine stock proposition. Price for this half section, only \$3,500.

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50 acres at Elberta, Utah, very fertile, well adapted for raising beets, alfalfa, fruit, garden truck and all farm products. Prior water right at \$1.00 per acre if used. Can be purchased for \$75.00 per acre if taken quick. A good buy for the man that wants a small farm at a reasonable price. Write or see

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The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our Committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
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Attention Farmers

You can rent or purchase land and water at Elberta, Utah County, Utah. Deep, rich and fertile soil, adapted to grain, beets, potatoes and forage crops. Plowing can be done now.

Come at once to Elberta, where 4,000 acres and water is waiting farmers.

Write Edward T. Jones, Provo, or M. B. Whitney, Elberta, Utah.

SHEEP MAKE GOOD

HELPERS ON FARM

Sheep are good farm help. They will range a farm from early spring until late fall feeding off weeds and growths that other stock will not touch. A small flock will mow the orchard and keep down the weeds about windbreaks, fences and buildings. All of this is simply incidental "velvet" as the wool clip pays for the flock's keep. The mutton return is the main source of profit. Besides, the high value of farm land, which compels farmers to fence their acres for hogs and other stock, lightens the added expense for keeping sheep.

This year with wool at 10 and 15 cents a pound above normal prices and mutton higher than it has ever been, any farmer is assured handsome returns if he gives his flock reasonable care.

Reliable Farm Bargains

This is the time of the year to move onto a first-class farm if you expect to move this year. We have got spring, with all the high prices on foodstuffs. The outlook, at the present time, is very serious for people with families, unless they are raising their own foodstuffs. We are offering for sale some very fine farms, all under cultivation, right near the railroad, good towns, schools, and other modern conveniences it takes to make a home.

Sugar beet land in the Bear River valley. This property lies within half a mile of the railroad station and town. Improvements consist of a 9-room house, stables, granary and other outbuildings. There is a first-class water right from the Bear River canal. Land is all level and is now in alfalfa and grain. 50 acre of alfalfa and 30 acres plow land. This alfalfa has been planted for a number of years and the land is now in first-class shape for sugar beets. This property can be had for 10 per cent down and 7 years on the balance at 7 per cent interest. Price \$200 per acre, including all improvements and water.

Forty acres, Cache valley. All watered from the canal. Adjoins the state highway. 1/2 mile from school. City water passes the place. 4-room house, stables and other outbuildings. This land can be had at \$125 per acre, on ten year's time; 10 per cent down at time of purchase and ten years on the balance at 7 per cent interest. We can give you 50, 60 or 100 acres, if you desire, with this building, on the same terms and same price per acre.

We have on 14th South property which we can sell you in half-acre one-acre lots, or more if desired. This property can be had at \$45 per acre, \$45 down at time of purchase, ten years on the balance at 7 per cent interest. This is a good buy if you are looking for something close in.

We have just secured the exclusive selling agency of some of the best farms in Utah. About twenty years ago the Keystone Steel & Wire company of Peoria, Illinois, came west and purchased some large tracts of land. They have improved it from time to time and now it is under a very high state of cultivation; in fact, these are some of the best farms in the state of Utah today. We have in the collection of farms, 40 acres, 160 acres, and 320 acres. We have modern homes, containing 8 rooms, 6 rooms, and 4 rooms. We can suit you as to the size of house and improvements, the number of acres of land and also the location. These farms are situated in the heart of the Bear River valley, right near the town of Tremonton. Some of them adjoining the town. We can sell these farms on long time payments at 6 per cent interest. If you are interested in a farm of this kind, it will pay you to investigate this proposition.

Eighty acres, all under cultivation and all under irrigation from the Bear River canal. This canal is conceded to be one of the best in the state and furnishes an abundance of water for irrigation purposes. The soil is of a sandy loam nature and some of the best in the Bear River valley and will produce from 15 to 25 tons of sugar beets per acre. It can be rented at \$20 per acre cash. Improvements consist of an 8-room 2-story frame house and very fine outbuildings. Nice shade around the house, lawns, flowers, etc. Family orchard, consisting of peaches, pears, plums, apricots and apples. This is one of the best buys we have on our listings. Can be had at \$165 per acre, on terms.

We have, within a few minutes ride Salt Lake City, on the electric, three acres of very choice land with one of the nicest cherry orchards in the state of Utah; room, new house, thoroughly modern, electric lights and city water, nice colonnades in the front of the house, fireplaces and everything you would desire for a modern home. This property is located on the county road and near electric car station. Has a first-class water right for irrigation. You are looking for a beautiful home in the country, this will suit you. We will consider taking Salt Lake City property in part exchange for this.

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For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

W. LEGHORN AND R. I. RED EGGS
AND CHICKS. WRITE US.

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BATES & SONS
POULTRY and FRUIT FARM
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BABY CHICKS

We are now booking orders for Spring Delivery in White Leghorns, Brown Leghorns, R. I. Reds, Barred Rocks and Black Minorcas. Anconas also.

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BABY CHICKS

S. C. W. Leghorn chicks from real profitable egg producers. Our chicks are vigorous and will thrive because our stock are healthy and because no pullets' eggs are used for hatching. Our hens lay all winter. Send for booklet.

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4 BEST 4 EGGS 4 BEAUTY
R. C. Rhode Island Reds, White Wyandottes, S. C. Black Minorcas and White Leghorns.

Bred for Eggs and standard requirements. Better start right. Eggs guaranteed to hatch or replaced free of charge. Write for descriptive folder and prices.

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LASHER'S HATCHERY IS NOW booking orders for baby chicks—White Leghorn our Speciality. We guarantee safe arrival and full count. Strong, vigorous chicks from the finest flocks of free range stock in the country. Write for 1917 price list and instructions on care of baby chicks. Lashers Hatchery, Petaluma, California.

BABY CHICKS

CAN FURNISH EACH AND EVERY week throughout April, May and June 10,000 White Leghorns, 200 Buff Leghorns, 1,000 Brown Leghorns, 1,000 R. I. Reds, 500 Barred Plymouth Rocks, 200 White Plymouth Rocks, 100 Buff Plymouth Rocks, 300 White Wyandottes, 200 Buff Orpingtons, limited number of Partridge Plymouth Rocks and White Orpingtons.

RAMSHAW, THE CHICKEN KING
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All kinds, good stuff. Eggs for setting from Prize Winning R. I. Reds, \$1.50 to \$4.00. All kinds chickens handled. Agent for De Laval Separators. **OGDEN FEED CO.**

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FOR SALE

S. C. Brown Leghorn eggs for hatching from bred to lay strain. Free range stock. Prices: 75c for 15; \$3.75 for 100 delivered. Fertility guaranteed.—D. Stratton R. D. 1, Box 207, Provo, Utah.

EXTRA QUALITY White Leghorn chicks 10c each. Carefully linebred from MacFarlane, Young, Cyphers and Martin strains of foundation stock. Eggs \$1.50 per 15, \$2.50 per 30, \$5 per 100, \$50 per 1000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used, disinfected every hatch. Don't save 2c per chick in buying and lose a dollar pullet in raising; get the best, and succeed. **NEWTON POULTRY FARM**, Dept. 8, Los Gatos, Cal. Catalogue free.

FOR SALE.

Baby Chix, hatched on the ranch, from Wood's White Leghorns that are carefully selected by the Hogan system and bred for heavy egg production and large size, 11 cents each, selected hatching eggs \$1.25 for 15 by parcel post; \$5.00 for 100 by express. Breeding stock, females \$1.50 each, males \$2.50 to \$5.00. All pure white typy birds. Sure to please.

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BLACK MINORCA AND
BUFF ORPINGTON EGGS.
UTILITY STRAINS

\$1.00 for 15; \$5.00 for 100.

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Direct from the Grower, save dealers profit. No. 1 grade, 13c; No. 2 grade 8½c per pound. In lots of 1000 pounds or more 5 percent discount. Samples on request.

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WANTED to hear from owner of good farm for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

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Two imported registered Percheron Mares, also several Purebred Jersey Bull Calves from heavy producing imported Island Stock. Apply

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Standard Bred Hambletonian Stallion, "LORD HOLT" A. T. R. 47857. Wt. 1250. Sweepstakes Winner Utah State Fair 1912. Will sell or exchange for other stock.

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BILL. WRITE US. **PACIFIC COAST SAWMILL COMPANY.** Portland, Oregon.

RAG APPLE KORNDYKE 13TH

BULLS FOR SALE

From A R O dams which we are offering at reasonable prices, write us.

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First class Registered Holsteins Bulls, ranging in age from two months to one year. Highest class breeding. Farmers' Prices. **STATE INDUSTRIAL SCHOOL**
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One Black, coming three year old Stalion. One Grey, coming three year old Stalion. One Brown, coming two year old Stalion. Four Black, coming two year old Stalion.

All registered in the Percheron Society of America Stud Book.

All strictly first-class Stalions.

Will be sold at a very reasonable price considering the quality.

All stock home raised.

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LEG BANDS for Poultry, Pigeons, Turkeys
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When housewives use sugar that is made in the west, such as Table and Preserving Sugar, they are securing a product that is not only 100 per cent pure but which also contains 98 per cent of energy when consumed as food—a body builder, a strength builder and an energy builder.

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Duroc Jersey Boars

Boars chuck full of Grand Champion Breeding. Bred the same way as our Utah State Fair Winners. We have a great lot of top spring Boars and are offering them at bargain prices. Every Boar guaranteed to please or money refunded. Write us today.

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The West's Best Durocs.

200-290-EGG, EARLY MATURING, WINTER LAYING Leghorns, Reds, Rocks Wyandottes, Anconas. \$3.00-\$10.00 yearly profit per hen. Breeders, Eggs, Chicks. Hundred every week; many repeat orders. Questions welcomed. Guarantee you profit with feed high. J. Beeson, Pasadena, California.

Send for Butter Wrappers today.

900--HEREFORDS--900

I have at this time out of my herd of 900 head of registered Herefords, 300 head of registered bulls ready to go, in ages from eight months to three years, including both those of my own breeding, and bulls bought from the best herds of Iowa, Illinois Minn., and Missouri, all with big bone, lots of size and quality and splendid blood lines. I have an especially strong lot of yearlings and two year olds, among which are many great herd bull prospects. Whether you wish bulls for registered herd or for range use I can fill your wants.

If you want the best in range bulls or are looking for a high class herd bull, and want to buy them at a price that you can afford to pay come and see my cattle. I will sell in lots to suit purch sers.

Located on the main line of the Santa Fe and train schedules are convenient for seeing cattle between trains, also have direct transfer connection with the Fort Worth and Denver for Pueblo, and all lines west.

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Canyon

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Stop Raising Worms

When it is so Easy to Rid your ORCHARD and Garden of all such Pests.

CORONA DRY ARSENATE OF LEAD solves your insect Problems. Write today for Free Booklet "How to Control Orchard and Garden Pests."

PORTER-FALTON CO.

Seed and Nursery Specialists
SALT LAKE

SOME ESSENTIALS

OF PRODUCTIVE SUGAR
BEET RAISING
(Continued from page 2)

considerations in the irrigation of sugar beets.

There are differences of opinion as to the correct time of applying water to sugar beets, but it is certain that the plants should be carried as long as possible before they are watered. If the irrigating is put off too long especially on heavy clay soil, the soil becomes so hard as to prevent the roots from expanding, hence greatly retards their growth.

So long as the beets have a fresh appearance and a bright green color they are not suffering for lack of water, and if furrow irrigation is practiced there is little danger of giving them too much water. When the leaves of the beets wilt and remain in this condition throughout the day, they should be watered immediately.

5. Cultivation.—There are two principal things to be accomplished

by cultivation namely the destruction of weeds and the retention of moisture. While the beets are small it is safe to cultivate fairly deep and quite close to the plants. The depth to which the ground is stirred when the beets are small should never exceed four inches.

It is usually best to cultivate the beets as soon as they are above the ground enough to see the rows, just before thinning operations begin. Cultivating before thinning destroys any weeds just coming up and establishes a mulch which prevents evaporation of the soil moisture during time of thinning. To obtain the best results it is necessary to hoe the beets as soon as possible after thinning and to cultivate after each irrigation, as soon as the soil is dry enough to carry the horse.

Thinning.—The beets should be spaced and thinned just as soon as possible after they are up. This can usually be done when the plants have from four to six leaves.



Overland
TRADE MARK REG.

1200 lb.
Delivery Wagon
\$850
f.o.b. Toledo

Extra—Three
Passenger Seats
\$15 Per Pair

Rugged, Hardy Work Wagons

These Overlands are as keen for the work of farm hauling as for the constant hard usage in commercial delivery work.

The Overland 1200 pound Delivery Wagon is built on the reliable time tested 35 horsepower chassis that made Overland famous the world over.

It is electrically equipped for lighting and starting and has every convenience.

The body is big and has capacity for larger bulk freight as well as 1200 pounds of weight.

It is a comfortable easy riding car as well and may be had with two *extra three-passenger removable seats for fifteen dollars additional if desired.* With these extra seats

you have a comfortable eight passenger car.

It is a great money maker and time saver on any farm.

At the price \$850 it is exceptional value for it shares proportionately in the economies of our vast production of the most comprehensive line of motor cars ever built by any one producer.

The smaller cars either panel or express type are exceptional values and equally sturdy and reliable for lighter farm hauling.

See the nearest Willys-Overland dealer at once and have him show you these wagons and the beautiful new line of passenger cars.

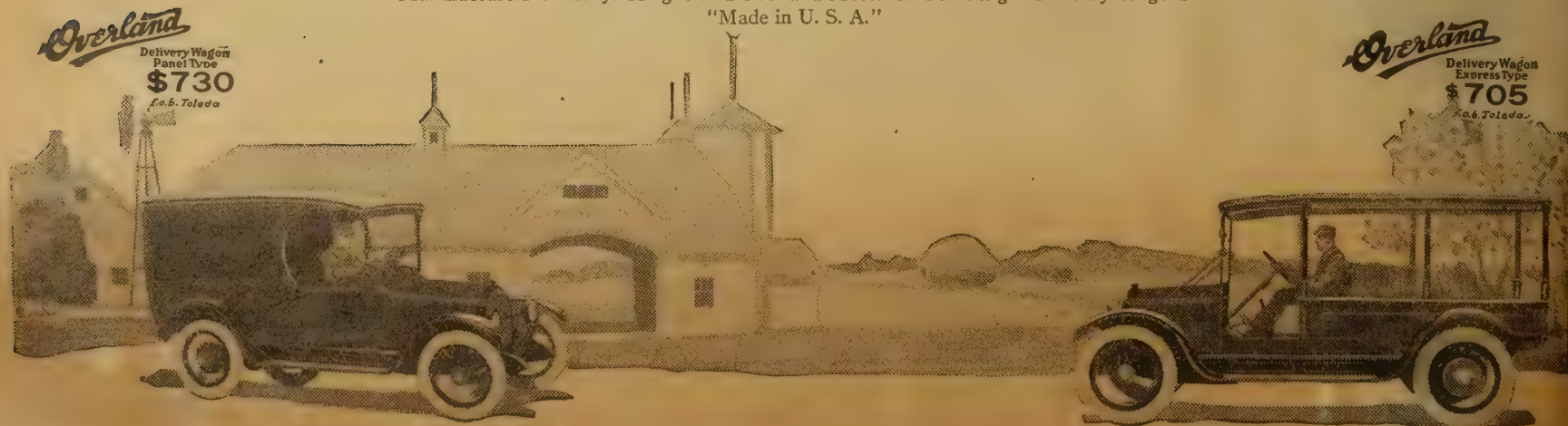
Descriptive literature on request. Please address Department 1002

Prices are f. o. b. Toledo and subject to change without notice.

The Willys-Overland Company, Toledo, Ohio

Manufacturers of Willys-Knight and Overland Motor Cars and Light Delivery Wagons

"Made in U. S. A."



Overland
Delivery Wagon
Panel Type
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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

LEHI AND SALT LAKE CITY, UTAH

VOLUME XII; No. 38-39

APRIL 28 and MAY 5, 1917



INCREASE THE NUMBER OF LIVE-STOCK

We must not forget to raise more live-stock. Wheat and other foods are important so also is our live-stock industry. Should we be so unwise as to allow our breeding stock of all kind to be killed or shipped away it would be a serious mistake. There are many reasons why we should raise more live-stock this year than ever before.

SUGAR BEETS

A POOR STAND IS THE CHIEF CAUSE OF LOW YIELDS OF BEETS

Weather and soil conditions have much to do with getting a stand of beets. A dashing shower, after the seed is planted is very liable to form a crust on the heavier types of soils.

Some of the very best beet growing areas have a large per cent of soil that rather readily crusts, under certain conditions. This tendency to form a crust can be largely overcome by plowing under alfalfa, clover or other crops which supply organic matter to the soil. The decomposition of this vegetable matter in the soil greatly aids in producing a flocculent soil which minimizes the crust-forming risk.

It is necessary to manage with conditions as they really exist, rather than the ideal, which all hope to attain to, some day, and therefore, every grower of beets should know what portions of the field that is planted to beets, are liable to danger from the forming of a crust.

With potatoes, corn and some other cultivated crops, it is a rather common practice to break the crust by harrowing, using the ordinary drag harrow. If the harrowing is done at just the right time, before the crust gets too forbidding, the drag harrow often does good. On many soils, by the time the sub-surface has dried sufficiently to prevent packing, the crust gets hard set. In many instances, the stand of potatoes and corn is injured by using a harrow. The beet plant when small is much more delicate than either corn or potatoes and treatment that will be reasonably safe for corn or potatoes will often greatly injure the young beet plants.

What happens to the small beet plant when a forbidding crust forms?

There is not much root system formed until the plant reaches the surface and the second pair leaves forms. There is not a great deal of sustaining nourishment within the beet seed as compared with corn or potatoes. Oftentimes, the kernel of corn will start the growth and development of the rootlets before the crown or stalk sprout starts and thus the corn plant will be able to withstand a great deal of adverse environment. There is considerable sustaining starch within the potato seed and fibrous roots begin to form as quickly and sometimes even sooner than the crown sprout; this is especially true where the seed has not been kept dormant and the original seed sprouts have been broken off before the seed is planted.

It is therefore obvious that treatment which would be safe for potatoes or for corn may easily sacrifice many of the small beet plants. Heat, moisture and air are necessary for all plant growth. The small beet plant has not the strength within itself, even when a generous amount of seed is used, to break this crust. The young plant will often curl and twist and attempt to grow beneath the crust; it has an unequal show and the vigor is at once impaired. After a time, the plant begins to turn brown—particularly if the weather is cold and the season is backward. Even after the plant gets through the soil, many stands of beets are greatly injured by this "damping off," as it is commonly termed, which in reality is an attack of the Phoma, which often causes considerable loss to the crop, at various stages.

If the weather turns favorable, such as a warm shower, a badly infected field will overcome the trouble and outgrow the attack. No time should be lost in helping the young plants to recover. Cultivation should be kept up religiously.

The very best way that has yet been found to combat the crust is the prompt use of a scarifying attachment for the cultivator. Most manufacturers offer what is known as the "spider," which is a revolving wheel with pointed prongs, somewhat curved. The "spider" attaches to the cultivator and revolves immediately over the row of beets. A great deal of care must be used in driving, as there is only an occasional plant showing through or the drill mark yet to guide. In one district where the soil was heavy, two farmers devised a home-made attachment for their cultivators, which, in their estimate, gave them a 75 per cent of stand where a bad crust threatened to give them not more than 25 per cent of stand. Not all of the implement dealers or growers know about the "spider" attachments. They are not expensive and their use in a single day will often much more than repay their cost. Even if they are needed only once in three or four years, they are a kind of insurance policy against a bad stand.

Other causes also contribute heavily to poor stands and these other causes will be discussed later. On account of the scarcity of beet seed, the largest possible use deserves to be made of every available pound and it is none too soon for the grower with heavy soil that is liable to crust, to prepare for prompt and efficient remedies.

Everyone knows the importance of keeping the pig growing with no "stunted" periods in its existence. It is equally as important that the beet plant be kept growing in a thrifty way. Thrift is a great foe to disease or insect pests. Again, we repeat, a poor stand of beets is the chief cause of low yields. Low yields mean small profits or no profits, even with high prices for the crop.

OBSERVATIONS REGARDING SUGAR BEET RAISING

By Orrin R. Bowden, Granger, Utah.

As a rule the farmers of the past have given little attention to good farming and to keeping the fertility of the soil up to standard, but have tried to get as large returns in dollars out of the soil as possible. Through lack of knowledge they have impoverished their soils to such an extent that they wonder what is the matter.

The thing left to do now is to find a remedy or something that will assist in redeeming the fertility of their soils. The experiment stations are doing all they can in analyzing soils and trying different crops in different soils to find out what is needed and what will build up their soils. They give this information free to all who ask for it.

The sugar beet plant is very sensitive to poor and uncultivated soil. It needs care and attention to get even fair results; hence, great care should be taken to select soils that will give good results, for one good crop is better than two poor ones. In some places beets have been grown continuously on the same land for twenty-five years and the farmers wonder what the trouble with their land is.

A campaign should be taken up with the farmers to show the difference in results between poor and good farming and in addition they should be shown that it pays to have a system of rotation for the sake of the soils as well as from the money standpoint. For it has been proved that proper rotation and the application of fertilizers—barnyard manure being the best for this country, and intense cultivation will greatly aid and in time will increase the fertility of the soils. Then farming will pay.

The system of rotation varies with the different location. For instance here we should have alfalfa, grain sugar beets and potatoes. They are all good crops from the cash standpoint. But the question is—how long shall alfalfa be grown on the same land and what crop shall follow, and how long shall sugar beets be grown, and what crop shall follow, etc.

In addition we must ask ourselves how much barnyard manure shall be applied and at what time during the rotation of crops, and should commercial fertilizer be applied, and if so, what kind?

It has been shown that intense cultivation and rotation will keep off insect pests and diseases and when used in conjunction with fertilizer

will redeem soils of this or any other section.

The returns from beet growing are proportional to the intelligent effort expended in producing them. When compared with most other crops the income from an acre is decidedly in favor of beets. Because of the in-

(Continued on page 14)

PRESIDENT WILSON SAYS

"By planting and increasing his production in every way possible, every farmer will perform a labor of patriotism for which he will be recognized as a soldier of the Commissary."

That Our People may be Properly Educated to meet the Serious Emergency that Threatens our Nation the

AGRICULTURAL COLLEGES OF UTAH, NEVADA and CALIFORNIA

Will Operate a

National Preparedness Train

Through Their Three States Over the Lines of
THE SALT LAKE ROUTE

This train will be the most elaborate Educational Special ever operated by American Institutions of learning and while this Magnificent Display

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It also Carries a Most Important Message to DWELLERS in the CITIES
The work advocated is necessary to the Maintenance of Our Nation and WE
ALL MUST DO OUR SHARE TO WIN VICTORY

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general agents in the Intermountain Empire for the newest and most effective of farm and ranch labor-saving equipment, will exhibit the latest productions of the

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Including its Wonderful
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PLOWS

The C. L. Best Gas Traction Company of California

will Exhibit its Newest Development in A GAS TRACTION ENGINE

THE AVERY COMPANY of Peoria, Ill. will Exhibit a Flock of Avery Tractors

At every point where this National Preparedness Train makes a Stop these Tractors will be unloaded and make an Exhaustive Demonstration of the possibilities for increased development in both Acreage and Crops where these wonderful labor-saving machines are operated.

THE FAIRBANKS-MORSE COMPANY

will exhibit a car of electric devices, including generators, dynamos, electrically operated devices for the modern equipment of the home and ranch, together with a line of electric and gas driven motors, pumps and the very latest novelties in water handling and electric generating equipment.

The Utah-Idaho Sugar Company in Co-operation with The Sugar Companies of Southern California.

will present a car containing exhibits illustrative of every phase of Sugar Beet Culture together with a demonstration of the unlimited household uses for which this magnificent product is adapted.

A Car Devoted to an Exhaustive Demonstration of Red Cross Work From which may be quickly learned the necessary requirements of FIRST AID TO THE INJURED. There will also be a complete Exhibit of Home Economics with plans for the perfect equipment, maintenance and operation of the home.

Two most important Features of the Train will be

A Car Devoted to Bean Culture and a Car Demonstrating Forage Crops.

These two cars present Educational Possibilities that are specially necessary and particularly valuable in our present crisis. The U. S. Government will present a car devoted to a complete Exhibit of FORESTRY. The train will also include an Exhibit of Highest Grade Blooded Stock. Latest Designs in Ranch Buildings, General Farm and Irrigation Equipment and an Exhibit of Poultry Culture to which the Government particularly requests Special Attention.

A CORPS OF TWENTY INSTRUCTORS

will accompany the train, directed by
Dean Thomas F. Hunt and Prof. W. T. Clarke, Extension Director,
College of Agriculture, University of California.
Dr. E. G. Peterson, President, and Prof. John T. Caine, III,
Director of Extension, Utah Agricultural College.
Prof. Charles S. Knight, Dean and Charles S. Norcross, Director of
Extension, College of Agriculture, University of Nevada.

THIS MAGNIFICENT NATIONAL PREPAREDNESS TRAIN WILL BE AT

Salt Lake City, May 2; Tooele, May 3; Lehi, May 4; American Fork, May 5; Provo, May 7; Spanish Fork, May 8; Nephi, May 9; Delta, May 10; Panaca, Nev., May 11; St. Thomas, Nev., May 12; Milford, Utah, May 14; Lund, Utah, May 15; Las Vegas, Nev., May 16.

Potato Seed Treatment

By Geo. R. Hill, U. A. C.

There are two kinds of diseases which are carried by the potato tuber:

1. Those that are carried on the inside of the potato. This class includes the wilt diseases—Fusarium Wilt, Blackleg, etc.

2. Those that are carried on the outside of the tuber. This class includes Rhizoctonia Scale, etc.

The presence of diseases of the first class is indicated by a brown ring or brown streak in the white flesh of the potato when a cut is made about $\frac{1}{4}$ of an inch deep across the stem end of the tuber. Since these diseases are on the inside of the potato, the treatment recommended for those of class 2 which are carried on the outside, will not kill them. Seed selection should be used to eliminate the diseased tubers. Potatoes showing the brown streaks should not be planted or if they are planted a quick snce should be cut from the stem end of each, thick enough to remove all of the brown streaks. This latter method will not get rid of all of the disease but it will materially reduce it.

The diseases of class 2 which are carried over on the outside of the tubers can be killed by soaking the potatoes for two hours in a solution of corrosive sublimate (mercury bichloride) 4 ounces to 30 gallons of water (which is 1 part in 1000 parts of water). Four ounces to 20 gallons of water is better. Care should be taken to see that the corrosive sublimate is thoroughly dissolved before the potatoes are placed in it. The solution should be made up in a wooden trough or barrel or bucket. Corrosive sublimate is poison. Potatoes should not be cut before treatment.

Potatoes take the poison out of the solution. The solution will not be strong enough to do the work after four lots of potatoes have been treated in it. It should then be thrown away and fresh solution made up. Burlap sacks also absorb the poison. Potatoes should not be in sacks during treatment if it can be avoided. The treatment will be more effective if they are not. The potatoes should be as clean as possible because the dirt on them also absorbs some of the poison and takes it out of solution. Farmers who have a large quantity of potato seed to treat find it expensive if they have to throw away the solution after the fourth treatment. A large number of experiments have been carried on at the Utah Experiment Station of the Utah Agricultural College to determine at just what rate potatoes absorb corrosive sublimate. It has been found that six bushels of 3 ounce potatoes which are clean will absorb one ounce of corrosive sublimate in the two hours. Larger potatoes will absorb slightly less than this amount. If the potatoes are not cut, if they are clean, and if they are not kept in sacks during treatment, one ounce of corrosive sublimate may be added for each six bushels treated and the strength of the solution will be maintained. Water should also be added to keep the volume the same as the original. Such a solution may be used from 10 to 25 consecutive times and even more if it does not get too muddy. A muddy solution will not be very effective.

For large quantities of potatoes—a wooden trough 2½ feet wide by 2 feet deep by 8 feet long has been

found convenient. Such a trough can be built by the farmer from 2 inch lumber, with iron rods at the ends and sides to keep it tight, for a nominal sum. If kept filled with water such a trough will last several years. A beet fork can be used to advantage in taking the potatoes out of the trough. The tines of the fork should be painted with white lead to prevent corrosion. A mark can be placed on the trough to indicate different quantities of solution and the volume brought up to this mark without the trouble of measuring it into the trough. Such a trough will hold 150 gallons of solution satisfactorily. It will take 20 oz. of corrosive sublimate to make this volume of solution and this quantity of solution is enough to treat 20 bushels of pota-



Out of the great varieties of each kind of corp adapted to our conditions, the tests of the Utah Experiment Station in co-operation with the farmers have determined which variety is best suited to the farms in Utah.

atoes at one time. Twenty bushels to 150 gallons of solution at one dipping is equivalent to 1 bushel to 8 gallons. If some boards are placed in one end of the trough at an angle of about 30 degrees it will make it much easier to pick up the potatoes with the fork.

Not all of the Rhizoctonia will be killed by this treatment. Some of the larger black bodies are not killed in that length of time. A long series of experiments involving several thousand of trials have been conducted by the department of Botany and Plant Pathology at the Utah Experiment Station of the Utah Agricultural College to determine how these fungus bodies may also be killed. It has been found that when potatoes are soaked in water for about 36 hours just before treatment that these bodies start to grow and are then much more readily killed by the poison solution. It has also been found that when the potatoes are soaked before treatment for this length of time that the formalin is as good as the corrosive sublimate and it is cheaper. Formalin should be used at the rate of one pint to 25 gallons of water and the potatoes soaked in it for two hours. After the formalin treatment the potatoes may be used for food as the formalin is a gas and is gone as soon as the potatoes are dry. It is not as effective however if the potatoes have not been soaked before treatment. In soaking the potatoes

Practical Economies

So much is being said these days about saving and conservation of food and clothing that the Agricultural College has issued a circular with many practical suggestions. We are giving only a part of it this week.

CARE AND REPAIR OF CLOTHING.

Ruskin says, "Clothes carefully cared for and rightly worn, show a balance of mind and self-respect."

The girl who wishes to appear well dressed and properly gowned will not neglect the little things that add to the freshness and durability of her clothing. The little attentions, such as replacing a hook, fastening a button, removing spots, brushing carefully, pressing, hanging on hangers adapted to the article, replacing soiled collars and cuffs by fresh ones, airing and folding along seams as near as possible, take but a few minutes if

Waists in reserve may be kept in bureau drawers or boxes. They should first be carefully folded and if fancy, the sleeves and bows stuffed with tissue paper. Good gowns if hung in closets should have cover bags slipped over them. Skirts and coats with bias seams are not improved by hanging, as the bias parts are apt to stretch out of place. All steel pins should be removed from clothing, even if it is put away for just one night, as the least dampness may cause rust spots. Pressing adds much to the appearance and durability of a suit or skirt, as well as to the comfort of the wearer. Press with a hot iron and damp cloth on the right side over a thick pad until nearly dry; then turn the garment on the wrong side and press dry. Woolen goods will mark or shine if pressed without a cloth, and the texture of silk materials will be injured if the iron is permitted to get too hot.

Footwear.

Care of shoes and rubbers—It is better to have two pairs of shoes and alternate in wearing them. The pair not in use should be kept on shoe trees or something improvised to keep them stretched. A good polish keeps the shoes looking neat and preserves the leather. When shoes get wet the thread rots and soles separate; rubbers will protect them. These will last a long time with a little care. Wash them promptly after wearing. Do not let mud dry on them nor leave them in direct sunlight or near heaters, as heat spoils and mud rots them. Soft paper stuffed into heels and toes keeps them in good shape. Adhesive plaster or a few stitches will help if they become torn or split at the sides.

Packing Away.

Care of clothing between seasons—All clothing for the season should be carefully brushed, cleaned, repaired and put away in tight cotton bags, boxes or packages. If these are plainly labeled with their contents, time will be saved when they are needed. Woolen articles should receive a good sun bath and careful inspection for possible traces of moths. Gum camphor, black pepper, tobacco leaves and tar paper are some of the moth preventatives that can be used in packing clothes away. Garments that are outgrown should be disposed of. In folding lay the articles on a flat, large surface and fold on the seams if possible, paying particular attention to sleeves and collars. Coat lapels should be turned to lie flat, collars turned up, and the coat folded through the center seam. Summer clothing should be clean and smoothly folded. Blue tissue paper is said to prevent white materials from turning yellow.

Colored Materials.

Care of colored clothes before washing—It pays to set colors before laundering. For blue, use one-half cup of vinegar and one tablespoonful of salt to a pail of cold water. Lavenders may be set with a tablespoonful of sugar of lead to a pail of cold water. Pinks and blacks may be treated with salt, two cups to a pail of cold water. Pinks, lavenders, reds, creams, yellows, in fact nearly all colored materials should be allowed to soak several hours before washing.

(Continued on page 7)

done promptly and keep the wardrobe in good order.

Suggestions.

Keep coats, waists and dresses on coat hangers and skirts on the kind that will keep the bands straight. Air clothing when it is removed at night and wear a different set to sleep in. If moist clothing is thrown around in heaps or tossed into a dark corner of a closet or trunk, it can never appear fresh again unless it can be laundered. The wearing of clothes is not what tells so sadly upon them, but the manner in which they are cared for. A few garments nicely made, well fitted and properly cared for are preferable to twice the number of inferior quality and make.

all that is necessary is to keep the surface wet. This may be done by dropping sacks of potatoes in a ditch or pond of water or by turning the hose on them at intervals of perhaps an hour.

Potatoes may be planted immediately after treatment or they may be stored in a cool place indefinitely. They should not be planted while the soil is too cold or too wet. From May 20 to June 1 is the best time to plant for late potatoes in Utah. Potatoes should be planted on land which has not been in potatoes for a few years previous if possible and the seed bed should be well prepared.

DAIRYING

SILo CAMPAIGN FOR 1917.

Ben R. Eldredge.

Silo interest in Utah is developing at a rapid pace. There will be more silos built during 1917 than the state now contains, and the Utah people are building good silos, by far the greater majority of cement-concrete. It has been amply demonstrated that the wood silo is not adapted to the dry climate of the Utah valleys. A few seasons causes the wood to shrink and warp to such an extent that the life of the wood silo is very short.

We are approaching the time when the silo and the necessary machinery for silage making will be considered a necessary part of farm equipment. Just as at the present time hay-making machinery is considered essential on every farm.

There is no farm equipment that has saved more money for owners this past winter, in Utah, than the silos and silo machinery, in proportion to the amount invested. Every owner endorses the silo, and on the farms where silage has been fed will be found the best conditioned cattle and sheep, and it will also be found that there the feed bill has been easiest carried.

Sheepmen are being aroused to the value of silage for sheep, and many sheep farms and ranches will be equipped with silos and machinery during the present year, and the sheepmen are going into this business right. They are building concrete monolithic silos and buying the best machinery the market affords, and they are studying silage crops in a manner that means great development in this direction within a few seasons.

The cattlemen and beef feeders are also interested, and within a few more seasons the silo will be an important factor in this line of livestock farming.

Already from one boiler snap in

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We loan on first mortgages on Utah farms or Salt Lake City real estate at reasonable rates.

Prompt action and fair treatment if you do business with us.

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Steady Growth does
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There must be a good
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The deposits of this bank have grown \$2,167,798 in one year and nearly \$5,000,000 in seven years. For the reason, ask our customers.

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Bankers**

Founded 1859.
Resources over \$8,800,000.
SALT LAKE CITY



salt Lake City have silo forms been sent to the most northern and southern counties of the state (Cache and Washington), where material has already been assembled for many silos for 1917.

COW TESTING ASSOCIATIONS Sterling E. Price.

Bull associations seem to spring from test associations so that we see bulls being held in a community until their true worth is known, by members trading, buying together, and keeping good ones for service. Furthermore, only bulls of pure breeding are kept thus making an increased value in the off-spring of the herd. One association in Michigan boasts now of having brought in 22 pure bred bulls.

Testing points out individually so that only calves from the best cows can be saved. One farmer reports having sold a heifer calf from his best cow because the cow was not a good looker, but after having her tested he went in to the country and traded the man who had bought the calf a large cow for her. Another association in Ohio reports three cows that were shown in the Ohio State Fair. All three were of distinct dairy type and very fine looking cows but after being tested one showed a profit of \$109, the next best a profit of 14 cents and the third a loss of several dollars each year. Many farmers picked the 14 cent cow as being the best of the three yet it would have taken 778 such cows to equal the best one, or 7780 of such poor to make the same profit each year that an average herd of ten of the best ones would make.

It is interesting to note how rapidly the Guernsey tests are increasing. A New Jersey report shows them to be increasing for more rapidly than any other breed. This of course may be due to the relatively small number that have been tested here-to-fore.

Wisconsin found in many instances that the butter fat of some of the cows was worth many dollars more than the creameries were paying for the milk with the fat in it.

One real thing about it is that each one is brought into closer touch with everyone else in the association. The tester going from place to place, gets new ideas and spreads them as he goes; crops are surveyed, farm problems discussed, community problems are taken hold of, the women talk over household questions and even the children are put into the spirit of community development. Often public spirit is aroused until schools are built, better roads are made, and cooperative buying is given a trial.

In Indiana they have adopted a new method which is of interest and several other association have taken it up. At the beginning and end of each year's work a census is taken showing the conditions existing on the farms of each member. A comparison of the census taken at the beginning of each year with that taken will tell of many improvements that have been made, new methods introduced, etc., and when summarized for the association will enable the workers, members, and others to understand what is being done by the association as a whole. Each tester makes a monthly report to the state leader and a summary of all the work is published. "The surprising thing is the interest it creates among the farmers." They take more care of their stock more pride with their farms and more interest in the affairs of the community besides the great benefits they derive from the economy of feeding and the increased average of their herds. The tester takes more care with his work and naturally keeps more up with the newest ideas of the press experiment stations and other associations. It creates a friendly rivalry which is all the time working for better conditions. In this way the work gets not only the needed publicity but it shows what the different testers and associations



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— longer wear
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29 E. Madison St., Chicago

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are doing. It sets forth the value of the associations to the community and cannot but result in a greater interest in all work and a greater satisfaction on the part of the members.

The work of test associations is greatly aiding and showing the value of advanced registry systems, and breed associations. They are working for the same good, in that, they are giving a means of selection where the highest efficiency is to be obtained in breeding. The test associations have shown which the dairyman of his cows are the profit makers and which the money losers, and the breed associations have shown the breeders of pure-breeds which families are the

ones that are going to raise the standards of each breed. Since every careful breeder is striving for animals that will be profitable, the principle of continued selection should prove of some value from a practical standpoint.

The following is a table compiled to show the transmitting ability and inheritance of prepotency, such as should be shown by test associations where in pure-bred bulls are used on grade cows. This would further advance the using and the breeding of nothing but pure-bred bulls and those of high class blood.

These figures bring out the points as regards transmitting ability and

BREEDING RECORD OF BULLS CLASSIFIED AS TO NUMBER OF TESTED DAUGHTERS.

	Total No. of P. S.	Average No. P. S. per Bull.	Total No. of P. S.	Av'ge No. P. D. per Bull.
Classed according to number of Tested Daughters (T.).				
724 bulls with 8 or more A. R. O. daughters each, or 44% of all in registry	2692	3.7	5111	7.0
89 bulls with 25 or more A. R. O. daughters each, or 5% of all in registry	1252	14.0	1759	19.7
46 bulls with 35 or more A. R. O. daughters each or 2.8% of all in registry	921	20.0	1185	25.7
23 bulls with 50 or more A. R. O. daughters each, or 14.4% of all in registry	623	27.0	790	34.3
10 bulls with 75 or more A. R. O. daughters each, or 0.61% of all in registry	416	41.6	484	48.4
P. S.—Proved Sons. P. D.—Proved Daughters.				

inheritance of prepotency, and serve as a splendid guide for a cow tester to advance pure bull breeding.

The figures as published for the



She's The Money Cow

She makes use of every ounce of feed. Her milk is the richest of all the breeds in butter fat and solids. She is rugged and vigorous—will thrive in any climate. She milks steadily. She is beautiful and gentle. She's the mortgage lifter. She's the cow for the everyday farmer, yet she's the rich man's pride, too. And she's the cow for the family.

Our free book, "About Jersey Cattle," proves these things. Send for it now—a postal will do—it's interesting and instructive.

The American Jersey Cattle Club
387 West 23rd Street - New York City



AVOID a "leaky" thresher this year. Hire or buy a thresher that will save your grain. A Red River Special will do it. It beats out all of the grain. Many owners have threshed out big sacks of grain from straw stacks left by other machines. Hire the man who owns a

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or write us and learn about our "Junior" machine. Built in a size that makes home threshing pay. Run it with a gasoline engine, tractor, or light steam engine.

Not to be compared with usual small threshing machines. Has every feature of the Red River Special—famous "Man Behind the Gun"—same arrangement of shakers, adjustable chaffer, and large sieves. Write for Circulars.

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Builders Exclusively of Red River Special
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TANKS CARRIED IN
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first year of an association show the relative low records of the average dairy herd in comparison with the dairymans idea of what he is getting. The same thing is found in practically every herd that is put under the supervision of an official tester. Another thing that opens the dairymans eyes is the relative number of poor that it shows up in comparison with the number of good.

CORN FOR SILAGE

By Lucient A. Sweet.

It has been a debatable question which kind of corn to use as silage. The writer has used nearly every kind of corn, thick and thin planting, large field corn and small varieties, also the Canada smut variety of flint. One year we filled our largest silo part full of thin planted, drilled corn. It was well eared; nearly every stalk had a good sized ear. It was corn that would probably have husked not less than 50 bushels of shelled corn per acre. It was cut and packed into the silo at just about the right stage, was cut fine and it kept in fine condition. The balance of the same silo was filled with thick planted fodder corn. About three-fourths of a bushel of seed to the acre was used on the latter kind and about five to six quarts to the acre was used to grow the former; the same variety was used in both instances, it being a medium sized yellow dent.

The silo was opened at the usual time and the silage was fed with clover hay as roughage, using wheat bran, oil cake meal and corn meal as concentrates. The thick planted corn was on top and it consisted of leaves mostly with but few if any ears. This silage seemed to be eaten up clean by the cows at once and with relish. The flow of milk was satisfactory and results as good as could be expected were obtained. As the feeding continued the leaf silage was gone and we came to the corn that was planted thin which was so heavily eared. The grain ration was kept up just the same as it was when the silage was mostly leaves and contained no grain but there was no perceptible gain in the milk flow.

To Sum Up.

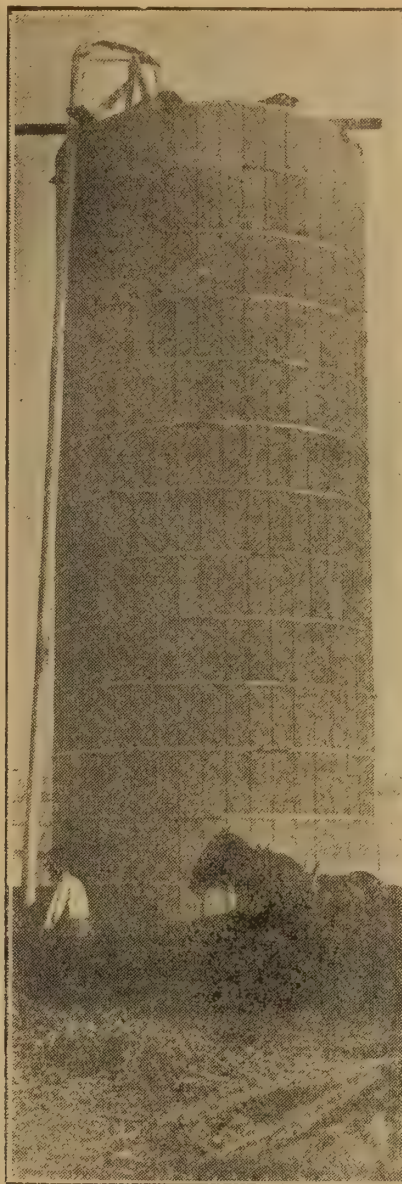
The writer believes that the palatability and the ease of digestion of the leaf silage is so much more than the few hard leaves and the coarse woody stock of the thin planted corn that it more than offsets the advantage gained by the grain in the silage, consequently the thick planted leaf silage is the better feed of the two. Possibly for feeding fattening steers the thin planted would be a trifle better.

It is only a few years since farmers have learned the great value of silage for feed. Only a few years ago men who fed large herds of steers thought that the only feed fit for a steer was dry corn but that time is past and gone. There is every reason to encourage farmers in both the dairy and beef business and silage is indispensable no matter which line you choose.

Another very strong argument in favor of thick planted silage corn is the fact that it does not grow quite so high, will stand better in a big wind, and if it blows over it generally blows in one direction, consequently is more easily cut and bound; being mostly leaves it makes a more compact bundle which is very much more easily handled than the large heavy stalks in the bundle that is loaded with big ears.

SOME GARDEN POINTERS.

- 1—The aim of every person should be to have a fresh supply of vegetables throughout the summer.
- 2—We should remember that we can grow as fine vegetables as can be produced elsewhere in the United States.
- 3—We should remember that the use of a greater variety of properly cooked vegetables in the diet is desirable for they contribute minerals which are necessary for the proper development of the body.
- 4—No farmer in the state is so



YOUR SILO

whether it is 100 feet high or 30 feet—can be filled with entire satisfaction with the

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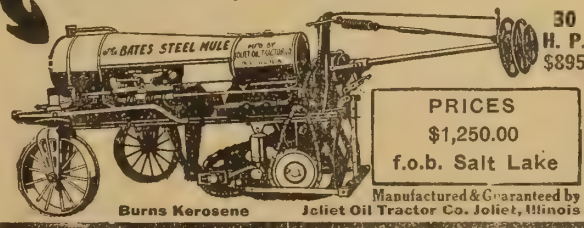
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No new implements are needed. Your old tools will do the work cheaper, quicker and better when hitched to a Bates Steel Mule. Come in and let us tell you all about it.



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Salt Lake.

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busy but that he could find time to plant a good garden.

5—We should remember that it is cheaper and healthier to grow our own vegetables than to buy them from the grocery store.

6—Don't forget that to make the soil fertile, liberal applications of well rotted manure are necessary.

7—Remember that to secure best results, only standard varieties and those that have been well tested should be planted.

8—Place the ground in the best possible condition before planting the seed.

9—Don't forget all about the garden after the seed is planted.

10—Remember that in order to obtain nice tender vegetables it will be necessary to weed, hoe and irrigate frequently.

C. C. VINCENT.



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Purebred Registered
Send for Free Illustrated
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Improved Powers Combined Well Boring and Drilling Machine

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed.

Small investment; easy terms. Make machine pay for itself in a few weeks work.

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portance to you and to us.

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Association, Agricultural College Extension Depart-
ment and Utah State Fair Association, Utah-Idaho
Millers' and Grain Dealers' Association, Utah Fruit
Growers Association.

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We guarantee every subscriber against loss thru dis-
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honest responsible advertisers, nor will we pay the
debts of honest bankrupts. Notice of complaint
must be sent us within thirty days from date of the
transaction, and the subscriber must have mentioned
Utah Farmer when writing the advertiser.

To produce your own food is a good way to
help. Raise some poultry. You can do it on a
small plot of ground if necessary. It would be
a good slogan if we could carry it out, "one hun-
dred or more chickens on every farm." En-
courage the boys and girls by providing them
with some chickens.

Extra care should be given our farm animals
this spring. Most of them have suffered for the
want of good food during the long severe winter.
Now we need the horse to help us put in our
crops and he is not in the best of condition to
do his work. Give him a little extra care and
do not over work him. It will pay in the long
run and you will get better results.

"STOP RECRUITING FARMERS"

This is one of the suggestions of secretary of
State Harden Bennion. It was sent to U. S.
Senator Thomas P. Core in answer to a tele-
gram as to best plans for crops production and
conservation.

Think of what it means for 15 to 26 recruits to
come from small farming towns, such has been
the case in a number of Utah towns.

The farmer boy can always be depended upon
to do his share. Up to date the recruiting cam-
paign has been more effective in rural districts
than in the cities. The present fight can only
be successful if we have food and you can not
get it unless the farmers boy is left on the farm.

After the first year of the war, the drain on
the farm workers in Great Britain was so ser-
ious that they found it necessary to call back
from the front a large number of experienced
farm boys to go back on the farm and produce
food stuff.

We realize the great responsibility of the farm-
er in the present crisis and also know that thou-
sands of others could help. Close the picture
shows one day a week and spend the money for
buying potato or other seed, even with the ex-
treme high prices it would supply a quantity of
seed enough to plant all the ground needed to
insure a big crop. City people complain about
the high cost of living yet they will spend enough
money and time at the afternoon ball game that
would cultivate a garden large enough to help

supply food for their home. Here are two ways
in which people generally could help.

HOW TO HELP INCREASE OUR FOOD SUPPLY

Many ways have been suggested as to how we
can increase our food supply. Hundreds of
vegetable gardens will be planted. Vacant lots
will be cultivated. All this will help but the
great burden of increased production is up to
the farmers.

The late season and extreme high price of
seeds will influence the amount of acreage to a
certain extent. Experienced help is the big
problem. The farmer is now working over time
to do his part.

The thing for some of our bankers, lawyers,
doctors or other professional men to do is send
the farmer money for seed, labor and machinery
so he can do even more than he is now trying
to do. Do not expect him to come to you. It
is up to you to make the offer. He is too busy
now to think about asking you for such things.
More seed, more help, or the money to hire it.
modern machinery to help plant, cultivate and
harvest is what the farmer wants in order to
increase the food production.

PROVIDE FOOD FOR LIVE-STOCK

Many of our live-stock and dairymen have had
an experience the past winter they will not want
to repeat for years to come.

The grains for the food of man must be pro-
duced, and while we are making our plans to
increase our crop of wheat, sugar beets, etc.,
we must not forget our live-stock.

Every silo should be used and new ones built,
to conserve all the plant lending themselves to
ensilage.

The coming year will be disastrous to our
live-stock industry, unless we provide feed for
them. Use the pasture and grazing land when
possible in order to conserve any crops that can
be used for winter feeding. Should another
year follow as the one just past it will take years
to recover.

We can produce plenty of feed for our live-
stock, but conditions justify us in suggesting the
most economical use of all we produce. Allow
no waste to occur on your farm this year.

Along with your other crops produce all the
animal feed possible and use it to the very best
advantage.

SAVE THE BREEDING STOCK.

From our point of view the year 1918 will be
just about as serious a problem in regard to
our food supply as 1917. We are suggesting
this thought at this time to prevent if possible
the killing of our breeding stock. We must
keep in mind the food supply of the future as
well as the present year.

High prices for live-stock and high prices
for all kinds of feed make it a great temptation
on the part of the farmer to sell his breeding
stock.

Once the country is depleted of breeding stock,
years are required to re-establish the live-stock
industry on a normal basis. Heifers and brood-
sows should not be thrown on the market even
though prices are exceedingly tempting.

It is a patriotic duty of every one to save the
females of his herds, what ever kind he is rais-
ing. There is no doubt but what prices will
justify him doing this. Live-stock of all kind is
essential to our success in farming and we must
conserve the breeding stock.

It is your duty and we are sure it will be to
your profit to save all the breeding stock pos-
sible.

ABOUT POTATO SEED.

We want to offer a word of warning to those
who are planning to use "potato peelings" and
"eyes of spuds" for seed. There must be enough
"meat" of the potato left with the eye so that
it will start to grow. Once started the plant
secures its food from the soil, but the start must
come from the potato itself. Don't expect some-
thing for nothing. Because of the scarcity and
extreme high price of potatoes the greatest care

should be given the seed bed in order to make
sure a good stand. The treatment of seed for
potato diseases is very important. Only the
other day a man who had purchased a few
bushel of potatoes for planting, just happened
by chance to show them to an experienced farmer
and upon examining them found fully seventy
five percent had fusarium wilt. How disap-
pointed he would have been when the presence of
this wilt was made known next summer, with the
loss of practically all of his crop.

BIG INCREASE IN THE COST OF MATERIAL

One of our subscribers called our attention to
the increased cost he had to pay on a new
machine, as I remember it was about 20 per-
cent, this seemed very high but what about the
cost of paper and other material. About one
year ago we bought a car load of paper costing
us \$1,145.00 at that time. We have just received
another car and it cost us \$2,470.00 there was
about the same amount in each car with in a
few pounds.

We do not know of but very few if any other
instances where the advance in raw material is
so great as is the case with paper.

A comparison of prices for raw material that
is used in making implements and machinery
will be interesting. Pig iron Januray, 1916, was
selling at \$20.00, this year January, 1917, sold at
\$30.00. Bessimer rails January, 1916, \$28.00 a
ton January, 1917, was \$38.00. Steel bars
January, 1916, sold at Pittsburg at \$2.00, January,
1917, sold at \$3.00. Fence wire, to large buyers,
January, 1916, \$1.95, January, 1917, 2.95 and so
we could give a number more and show the great
increase in raw material.

There is one redeeming thing from the farm-
ers point of view and that is, the price of farm
products has been advanced very materially.

When and how will all of these prices find a
proper and equitable adjustment no one seems
to know. There are very few, if any, who are
not concerned about all these changes because
they enter into the cost of production. It may
be wood, iron, cotton or woolen material.

It is nothing short of marvelous the changes
that have taken place in prices of all kind dur-
ing the past year or two.

UNCULTIVATED LAND

UNPRODUCTIVE LABOR

It is unfair and unpatriotic at the present
time for a speculator to hold land purely with
the idea of making money at the expense of his
neighbors, who are improving and cultivating
their property.

Secretary Lane says the land should be taken
from them if they do not use it, if they do not
cultivate it.

Our system is all wrong when we tax the man
for improving his land and let the speculator
go for little or no taxes. Some day this in-
justice will be corrected.

Every able boy or man should be doing some
productive labor or sent to the front. There is
no excuse for any one who wants to work. The
cry for help comes from the farm, the factory
and many other places. Why should the loafer,
"eat the bread of the laborer."

Governor Bamberger says: "If loafers and
parasites are driven from the pool hall and
saloons and from the sunny sides of the streets
and are compelled to go to work, it will not be
necessary to import orientals to do the work of
Americans. Put these men at productive labor,
and we will have enough honest, earnest, in-
dustrious men left to do our work.

"Why don't these men enlist? The army and
the navy can use them. Instead of that, look
at the statistics of the recruiting offices. The
greatest percentage of recruits to the army and
the navy, the guard and the marine corps are
from the country. They are the boys who should
stay on the farms and till the soil and go on with
their productive, constructive and beneficial labor.
Instead of that they have to answer the call of
their country because the loafers do not fill the
gaps in the service."

PRACTICAL ECONOMIES

(Continued from page 3)

Renovating and cleaning of clothing. Never attempt to make over and clean clothes unless the material is good enough to make it worth while to do the work well. Faded materials may be freshened by cleaning and dyeing, but directions should be carefully followed in the selection of dyes and the processes involved.

Stains.

Stains may be removed easily while fresh. Fruit stains may be removed by pouring boiling water from a height of a foot or two through the fabric stretched over a basin. Ink stains may be removed by squeezing the cloth out of milk, treating with javel water, or with a paste of uncooked starch and milk. Iron rust may be removed from linen and cotton by using lemon juice and salt. Grease spots may be removed with a good soap and hot water, or if the material will not stand laundering, it may be treated with absorbents such as French chalk, magnesia powder, or blotting paper and a hot iron. If the iron affects the goods, it should be held above it, not permitted to come in direct contact. Blood stains may be removed by making a paste of starch and applying it to the spot. It may be necessary to repeat the process several times. When solvents are used they should be the purest and best. Use enough to thoroughly

20 YEARS IN WHICH TO PAY--

\$10 or \$20 An Acre Down—Then the Land Will Pay For Itself as You Go Along—

In the heart of Cache Valley, 2½ miles west of Logan, Utah, lies Richland Acres, 2800 acres of the richest land in the west. Richland Acres has **TILE-DRAINED**, silt loam soil, ranging in depth to six feet; all city conveniences—schools and colleges—railroad traverses the entire length of the tract—sugar beet and condensed milk factories conveniently near—telephones—electric lights—and rural free delivery. Where else can you find such soil—with the same conveniences—on the same easy terms? Here at

Richland Acres

TILE DRAINED
"THE HEART OF CACHE VALLEY"

lies your opportunity. We are already developing the land—you will have no trouble in clearing a good sum on your first year's crop.

Here on the floor of the most fertile valley in all Utah lies land that for richness of soil, for productiveness and all that goes to make money for the farmer is unexcelled. It is land that will appeal most strongly to you men who know the money to be made from beet soil that will yield fifteen to twenty tons per acre from the first year; it is land that will appeal to every man who ever ran a dairy herd or raised blooded stock; it is land that is rich in hay and pasture possibilities. But come and see for yourself—talk to the farmers in the vicinity—ask THEM what they know about Richland acres!

There will never come another chance just like Richland acres; it is an opportunity that no section of Utah has ever offered before. The terms are so low—so reasonable—that they are within the reach of every farmer; and after the initial payment the land will pay itself out and give you money each month to put in the bank besides. We want you to see the splendid and successful tile drainage system installed at Richland Acres—a drainage system that has transformed these 2800 acres of land into one of the most productive farm areas in the entire west. The finest irrigation water right in the state.

Investigate these assertions! Bring some land expert along with you—get his opinion on the land. Investigate the water conditions, markets, schools, lights and other conveniences that are afforded at Richland Acres. Call, phone, write or wire to our agents—they will gladly give you detailed information regarding Richland Acres.

ED. D. SMITH & SONS,
Exchange Place, Salt Lake.

H. E. SMOOT,
Provo, Utah.

THE CARDON COMPANY,
Logan, Utah.

JOSEPH H. WATKINS,
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REXBURG REAL ESTATE & ABSTRACT COMPANY,
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LOGAN LAND & DRAINAGE CO.

A. F. CARDON, MANAGER, LOGAN, UTAH.



Healthy Hogs

Health of animals, as well as economy of expense, should induce every owner of hogs to feed them

HIGH PROTEIN TANKAGE

This splendid meat feed furnishes a large amount of protein—food value. Helps to produce firm and well balanced meat. If your dealer is out of stock write the—

OGDEN PACKING AND PROVISION CO.

Ogden, Salt Lake and Price, Utah.

Using Sugar

When housewives use sugar that is made in the west, such as Table and Preserving Sugar, they are securing a product that is not only 100 per cent pure but which also contains 98 per cent of energy when consumed as food—a body builder, a strength builder and an energy builder.

YOU NEED THIS FOOD

cleanse the article. Benzine, gasoline, naptha and the explosive solvents should be kept away from the fire. Turpentine is good for removing grass and paint stains.

Mending.

Since materials can be produced so cheaply, mending is becoming a lost art. However, no one disputes the utility of mending. A well made garment should not be discarded when a patch neatly put in will prolong its usefulness. Children, especially, should not be allowed to wear garments out of repair for it has a demoralizing influence upon their characters. "A stitch in time saves nine." This is particularly true of knitted materials that frequently come to pieces before you are aware. Darning the thin places before the hole comes through is true economy of time and effort. Net may be helpful in repair-

ing large holes. The size of the thread used in darning should correspond to that of the material.

In mending the knees of boys' trousers, set in a piece large enough to be taken into the seams and the patch will not be so noticeable. Bodices worn out under the arm may be best mended by setting in a new under-arm piece. To lengthen garments, let down the hem of the skirt and face it, or apply a false hem or let out tucks. Facings may be applied to neck and sleeves.

THE CALL FOR GARDENERS.

It is a world of lean years. Its food lies in this year's crops. The reserves will be exhausted at the end of the crop year. The outlook is not too rosy. The English wheat crop is reported backward, the Dutch small. French wheat will yield less than usual. Argentina will have little wheat

or corn to export. The Australian wheat crop is estimated at nearly 50,000,000 bushels less than last year's. Our big winter wheat states have not had moisture enough. Early vegetables in the southern states have been nipped by frost. So the shortage goes.

Food prices are high already. This careless, easy-going America must remember the ant and prepare for next winter. One thing nearly all of us outside the cities, and many urbans, can do. That is to raise all we can of the common vegetables, so easy to raise, thriving almost everywhere, so large a part of our food. We can't import them. We must grow them; and they should be grown in quantities unheard of before, grown by the rich—and the more they sell the better—by the poor, by the great mass that is neither. Beans, onions, peas, (Continued on page 15)

HOME

HOUSE CLEANING HELPS

Sarah McCordy.

How to Wash Windows.

Wash and dry the frame first. A wooden skewer and a cloth are very convenient for getting the dirt out of the corners. To wash the glass, rub a damp cloth on a cake of Bon Ami, and cover the glass with the paste, being careful not to get any on the frame. After the paste has dried thoroughly, rub it off with a clean dry cloth. Whiting and ammonia can be used in the same way with just as satisfactory results. After the glass is cleaned, polish it with a soft cloth and Columbia Spirits (denatured alcohol and water), which can be procured at any drug store.

How to Wash Lace Curtains.

Since curtains tear and lose their

shape easily they should be washed very carefully. They must not be rubbed, but soaked, and sopped. They should be measured before they are washed so that they can be stretched to their original shape when put onto a frame or mattress to dry.

Shake the dust out thoroughly and put them into a tub of warm water to which has been added one-half bar of dissolved soap, and two tablespoons of dissolved borax; then let them soak over night. The next morning fill two tubs half full of hot water to which add one tablespoonful of dissolved borax and enough dissolved soap to make good suds. Sop the curtains up and down several times in the water in which they soaked over night, wring them carefully and put them into the hot suds. Sop and squeeze them in this water until all the dirt is removed. Wring and put into the second tub of hot suds. In this tub repeat the process. Then empty the water from the two tubs and fill them half full of clean, slightly blue water. Put the curtains into one, rinse thoroughly, wring and put them into the second. Repeat the process, wring, and spread on the grass to dry. When dry, starch in thin starch, put on a frame and set in the sun to dry. If a frame is lacking, spread a clean sheet over a mattress, and pin them down to it. If it is impossible to put the mattress out side, be sure to put it in a room where there are plenty of windows and an abundance of fresh air.

How to Clean Matting.

Matting is difficult to clean since the use of much water causes it to rot, and to give off bad odors, and because alkalies and soaps tend to discolor it.

I have found that the best and safest method, after sweeping well, is to wipe it with a cloth wrung out of warm water. Then open the windows so that it will dry quickly and thoroughly.

If water has been spilled on it, wipe it up as dry as possible with a clean cloth, and finish drying with a flat iron over a cloth.

If there are any grease spots on the matting, remove them by making a thin paste of fuller's earth, which can be purchased at any drug store, and an alkali, spreading it over the spots and allowing it to dry. Leave it two or three days if possible, and then brush it off. The spots will have disappeared.

How to Preserve and Clean Linoleum

Linoleum is splendid for a kitchen or bathroom floor. It is easy to clean, and will last a long time if properly cared for. In order to have it maintain these qualities it should be oiled with linseed oil and turpentine (equal parts). This fills the pores and gives a better surface. Be careful not to put too much on it for it will only be wasted, and will serve as a dirt catcher. Rub it in well and let it dry for twenty-four hours before using. Then if there is a surplus, wipe it off carefully. As soon as the oil begins to wear off, re-oil it.

In washing linoleum, be careful not to use too hot water, because this causes it to shrink. A little kerosene in the water is very good—it cuts the dirt. A little milk in the water gives it a glossy appearance.

THE DUTY OF UTAH.

By Ben R. Eldredge.

Utah can aid materially in the movement for increased agricultural production brought about by the present war. A call has gone out for men. Certainly this call will not go unheeded, and this state will supply its share to both army and navy. But the army and navy must be fed, and there is already a crisis in the world's supply of food.

It now becomes a patriotic duty to produce food to the utmost power of production. The waste places on every farm should be cultivated and productive fields should be fertilized and



This can SERVES a Hundred Uses

in more than a million homes in the West. Is yours one of them?

Get a can of Ghirardelli's Ground Chocolate from your grocer. Make a cup of chocolate—a tablespoonful's enough—or use it in baking or desserts—and you'll realize immediately why more than a million homes prefer

Ghirardelli's Ground Chocolate

Since 1852

D. GHIRARDELLI CO.

San Francisco

Planet Jr.

Planet Jr Farm and Garden Implements do more and better work, and last longer than any other farm implements made. They are fully guaranteed. Over 35 years' actual farming and manufacturing experience is put into every Planet Jr tool. They are all made of the most durable materials for the purpose, and all cultivating parts are of high-carbon steel.



stimulated. Herds and flocks should receive more attention in detail, that every individual animal may be brought to its highest marketable value as early as possible.

The handling of our live stock brings up the question of greater conservation of our forage. This past winter has concentrated our attention on the importance of a greater feed supply. More land must be cultivated and other crops grown that have forage value. There are many annual crops that can be profitably used for hay, especially under present conditions. Among these are oats and peas, millet, sudan grass, and various grain mixtures. In the moist and cool valleys of Utah, oats and peas and mixtures of the grains can be profitably used for hay.

The value of our hay crop can be

increased by a little better judgment being used at haying time, that each class of hay be gathered at the right time, in its best condition, and stacked in a manner that will result in a minimum of waste.

Many Utah counties have long been known for their production of dairy products. What can be done now to increase the output in line? Suppose each cow in the dairy herds of Utah should receive such attention in care and feed that she should produce to the height of her ability. What an increase in the volume of dairy products there would be, and what a saving in cost of production would result! Would not that be worth striving for? What an expression of patriotism if the state could double its output of dairy products!

The hogs on the farms can doubtless

ALFALFA SEED FOR SALE

Best Grade.....14c
Good Grade.....12 1/2c
Good Grade Seed somewhat dark.....10c
Less than full sacks 1/2c lb. higher. All prices f. o. b. Oasis or Lynndale, Utah. These three grades all run high germination test.

Cash must accompany the order.

A. A. HINCKLEY
Hinckley Utah

While there is a good supply of Extra Fine Table and Preserving Sugar, western housewives should buy what they need. This will protect them against sugar scarcity. Today is not too early to order a bag of—

EXTRA FINE Table and Preserving Sugar ABSOLUTELY PURE

Made by Utah-Idaho Sugar Company. We have made this sugar as perfect as science has known sugar to be. For your convenience we have packed it in 10, 25, 50 and 100 pound bags.

Order the largest size bag you can afford, today. Order it by name from your dealer.

Made by
UTAH-IDAHO SUGAR COMPANY

be handled to better advantage and brought to a better value in food production.

The production of any article of food for home consumption is well worth while, for that will release a demand for food in some other direction, and an addition will be made to the world's food supply. Every rea-

sonable economy we can practice is a saving in world's wealth, and in these things every one of us can find expression for loyalty and patriotism under present conditions.

There is a world's shortage of food, and through the shortsightedness of men, much is being daily destroyed by fire, or sent to the bottom of the sea. Perhaps a few of us have not felt the pinch, but we may not be secure. We should see clearly the condition of the world and stir ourselves that our efforts may not only bring a sufficiency for ourselves and dependents, but a surplus that we may offer to less fortunate neighbors.

NAVY BEANS MIGHT WIN WAR
A Plan to Stimulate Their Production.
Government Guaranty of Price
Advocated.
C. F. Fitch.

The problem of crushing the Hohenzollerns is largely the problem of feeding ourselves and our allies. To increase greatly our food supply is one of the most important of war measures. To produce during 1917 in the United States a tremendous crop of dry beans of all kinds is possible and practicable.

To increase crops of small grains and of corn can be done only by sacrificing hay lands, or by omitting clover and alfalfa and substituting grains in the rotation, thus greatly reducing the supply of fodder and foods for cattle and seriously injuring future fertility and yields.

If, however, the country should produce 200,000,000 extra bushels of beans, every bit thereof could be used as human food; there would be no damage to future fertility of the soil. Every pound of beans would take the place of several pounds of meat. At least 40,000,000 extra cattle and hogs could be slaughtered and used in 1917, releasing great stores of leather and of meat, and great supplies of corn and other grain which would be consumed by these animals. Thus most of the beans could be stored for use in 1918.

The thin and sandy lands and those of the arid region are the ones adopted to the production of beans. Rich soils are apt to produce a poor set, except under irrigation where dryness can be secured at the right time to get the set. In the humid portions of the country beans are sometimes hard to cure; in the arid regions this process is easy. They can be grown throughout the north. They need not be planted until June. There is time.

Beans may be planted with grain and sugar beet drills, corn planters can be used by setting them wide and straddling the rows every other through. Threshing machines may be adopted to thresh beans. All sorts of cultivators and pullers may be used. All sorts of beans are good—white navy, pinto or Mexican and Lima.

If the United States government would appeal to patriotism, would guarantee a price on beans to farmers of \$5 per bushel, and would forbid or discourage by a heavy tax the use of beans for food up to July 1, so that seed would be available, I believe that an enormous increase in bean production could be secured. Perhaps such a guaranty would cost the government not one cent; certainly not a vast sum as war expenditures go. The proposition is radical but not more radical than the times. We must use extraordinary measures to meet extraordinary conditions. We must take the best of counsel, but we must not hesitate to tread new paths.

About 30 pounds of beans are required to plant one acre. The average yield for Iowa is around 17 bushels. At \$5 that would mean a gross of \$85 per acre or double the present average gross on corn. At \$8.50 per bushel, the present jobbing price in Iowa on good navy beans, 17 bushels amount to \$144.50 or more than three times the average returns per acre on present maximum prices for corn.

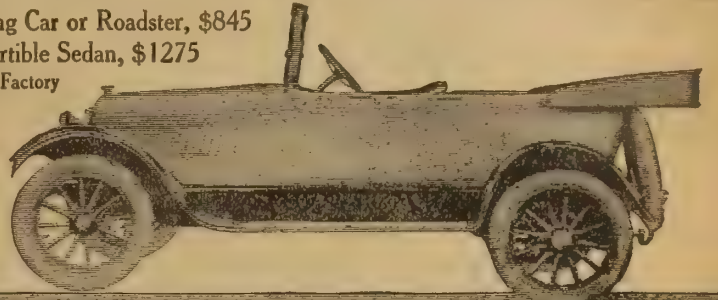
Increased production of beans this year would help greatly to feed ourselves and our allies to win the war and send the Kaiser to St. Helena

and then to feed the hungry world until it can grow a normal crop again. All hats off to the bean!

Do you remember the wise Jewish

boys of old who refused the wine and meat of the king, but eating freely of simple foods, including beans, were found fairer and fatter in flesh than those who ate at the king's table?

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Ogden, Utah



SPRING PLANTING

FOR DRY-FARMERS

By J. W. Paxman, Dry-farm Expert of the Utah Agricultural College.

Cereals.

It is to be hoped that such crops as wheat, oats, barley, and rye have already been planted this spring. This undoubtedly is the case in the more favored sections of the State. available acre in the northern part of the State where moisture conditions will justify should be made to produce some cereal crop.

Potatoes.

The potatoes for seed should be carefully selected and only those free from Fuserian Wilt, retained for planting. They should be treated for Scab and Rhizactonia by being immersed in a solution of corrosive sublimate in ration of 2 oz. to 15 gallons of water. They should remain in the solution for 30 minutes. Planting should be done as soon as the land can be prepared and not later than May 15. The rows should be 3½ to 4½ feet apart and the sets 12 to 15 inches in the row and at a depth of 3 to 4 inches. On the plowed lands, furrows can be made with an ordinary plow or shovel plow and the sets covered by means of a float or harrow with a 4 inch board placed diagonally across the under side. Either method will effectively fill in the furrows. A harrow should follow the float in order to provide the proper mulch on the surface. Where planting is to be done on ground not yet plowed, the sets can be dropped every third or fourth round, following the plow, and the surface afterwards harrowed. Five to six bushels will plant an acre.

The white Tepary or the Mexican Pinto Bean should be selected for planting on the dry-farms; although in case these cannot be secured other varieties may be used with safety and profit. The land should be well prepared by a smoothing board or an ordinary float. This will make the surface smooth and even. Planting should be in rows 3 to 4 feet apart with a plant to every 9 to 12 inches. A thicker stand will yield less beans, and if there are more plants than this they should be thinned. They should be planted from 2 to 4 inches deep just deep enough to get sufficient moisture to start the plant. The lighter soils and those showing a good supply of moisture should be selected for beans. They can be planted with a garden drill. Some corn drills will do good planting. If no drill is available farrows can be made, the seed dropped by hand, and afterwards covered by means of a float or harrow as suggested for potatoes. Farmers should plant as many acres to beans as they can care for, because beans yield a splendid paying crop, use less moisture than other crops, and improve the lands for crops following. From 500 to 800 pounds should be produced per acre with reasonable care, and the price will be about 15c per pound. If you cannot obtain seed make your want known to the Extension Division of the Utah Agricultural College. It requires 8 to 12 pounds to plant an acre.

A light planting of corn yields the best on the dry farms. It requires from only 4 to 5 pounds of seed for an acre. The White Flint is recommended above all others, although many other varieties do well. Care should be taken to get only seed grown under dry-land conditions, because of its drought-resistant qualities. If unable to obtain seed write the College for information. It is better to plant corn in check rows if possible as it enables a better cultivation. Hills should be 3½ to 4 feet each way and limited to one kernel only to the hill. This will give more corn and more fodder than if planted heavier. Like beans, it should be planted to moisture but not more than 4 inches deep. Both Beans and Corn require warm weather for best germination and these crops can be planted as late as May 25 when the season is backward. Earlier will be better if the weather is warm and danger from frost is over. Beans can be planted somewhat later than corn.

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Stubble lands plowed prior to May 15 that show a reasonable supply of moisture can very profitably be planted to corn by dropping the kernels at proper depth and distance in the plow furrow just as suggested with potatoes.

If these crops are cultivated pro-

perly the lands can be planted to winter wheat, without replowing. It will in all probability, produce better yields than usual. It will not only give the farmers a large income this year, but will add materially to the food production so much desired in this time of food shortage.

EARLY SPRING IRRIGATION AND THE USE OF FLOOD WATERS

L. M. Winsor.

In the crisis which confronts America today there are at least two important things that must be done: First, the mobilization of a gigantic army and navy for active military service, and second, the increasing of the nation's food and munitions supply to meet the urgent needs of the country. Of these two tasks it is probable that the latter will be most difficult to accomplish. There is a duty for every loyal citizen to perform and a great responsibility rests upon the tiller of the soil. To him the nation must turn for those products required for the maintenance of a food supply, not only for Americans, but also for many of our allies.

In increasing to the fullest extent the resources of the state, many thousands of acres of undeveloped lands

must be brought under cultivation and more than this, the water available for irrigation must be economically utilized.

In Utah moisture is the limiting factor in co-operating production, and every available supply should be developed to the fullest extent if production is to be increased to the limit.

One source of moisture supply hitherto given but meagre attention is that furnished by mountain streams during flood time in early spring. In many sections of the state a large percentage of the flood waters is allowed to run to waste or, at the best, is used in an indifferent manner.

The loss to farmers in this is enormous when considered as a whole. One of the main troubles is traceable to imperfect canal systems and the lack of proper diversion dams and control gates. Every stream should be provided with adequate diversions and canals for handling the entire surplus on lands which are without a water right or which have only a partial right. These canals should be clean and in readiness when the floods come on so that no water will be allowed to waste. Utah has an abundance of land, but a very limited water supply and many large tracts are still in brush or in dry farm crop when they might be irrigated by the surplus flood water. Other sections covered by a limited supply of normal flow might utilize the high water in early spring irrigation with decided benefit.

The early spring water in the case of lands already under irrigation may be applied with benefit on:

1. Alfalfa lands where the ground water is far removed from the surface.
2. On all well drained lands which are to be planted later in the season.
3. On grain lands before planting, where the normal moisture content of the land is insufficient to mature the crop without further irrigation. One such irrigation before planting is usually worth two after planting.

Over irrigation of any soil is harmful but under irrigation, when water is available for use and when the farmer claims a right to its use, should be a misdemeanor punishable by revoking the right to such use.

The early waters should be used with just as much care as is exercised in mid-season in order that none will be wasted. Water properly stored in the soil means successful crops. The longer it is stored in the arid soils the more producing power it has when brought into action in the growing plants. Therefore, the soil may be considered a storage reservoir more valuable than that constructed for the impounding of flood waters in storage basins.

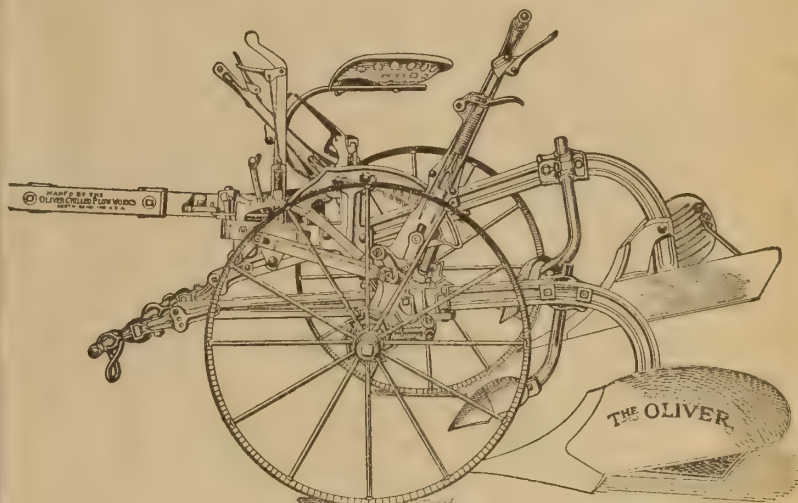
In any normal Utah soil of average depth, plowed in the fall or early spring, then irrigated and thoroughly cultivated before planting, a crop of grain, corn, beans, or potatoes may be assured, without further irrigation.

After irrigating an alfalfa field early, the spring tooth harrow should be applied freely in order to loosen the surface and insure the free circulation of air, and the conservation of the moisture thus stored. When a field of plowed land has been irrigated before planting it should be followed by a thorough harrowing of the surface in order that a blanket mulch may prevent evaporation and insure plenty of moisture for germination and maintenance of crop growth.

If the cultivated area is to be planted to potatoes, the surface mulch may be made two or three inches deep; but if alfalfa, grain, or other small seeds are to be planted, this surface mulch should be but one or not over one and one-half inches deep. Failures in the uniform germination of small seeds on land irrigated before planting are usually traceable to the fact that the soil has been stirred too deep after irrigation. In the spring the soil will dry out just as deep as it has been disturbed.

These are a few of the points which may well be considered if Utah is to do her part in the great task of feeding a nation or nations in this great world conflict.

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You will find more distinctive features on the OLIVER Two-Way plow than can be found on any other similar plow on the market. It is recognized as the lightest draft two-way plow sold in Utah.

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SALT LAKE CITY, UTAH.

LIVE STOCK

THE PURE-BRED SCRUB.

By Ben R. Eldredge, Utah.

There have recently been taken through different parts of this state numbers of beef-bred bulls which have been offered to the cattlemen and farmers as registered stuff that will comply with regulations which prohibit the use on the ranges of unregistered sires. It is unfortunate that sometimes the idea is gained that anything that is registered in a recognized herd book must be all right. There are a great many registered scrubs. I have encountered many of them and they are the meanest, most contemptible and dangerous of the world's scrubs; for they are sailing under colors that are misleading. A pure-bred animal is of value in proportion to his power to transmit the desirable qualities characteristic of his breed. If he has not strong individuality and is not descended from ancestors of high character and prepotency he may be a weed and, instead of stamping his

progeny with desirable character, may only impress on them his own lack of individuality and merit. He is pure-bred scrub.

Utah stockmen have been warned time and time again to look out for the peddler of so-called pure-bred bulls and stallions and yet this class of people are bringing the commonest kind of scrubs into this state and selling them to farmers with a "scrap of paper" purported to be a pedigree. I was shown a yearling shorthorn bull not long ago whose owner proudly told me had been "brought from Iowa." This is no reflection on Iowa cattle but that bull had no merit other than that he had been fairly well fed and in comparison to the farmer's other cattle which had been skimmed along, was in better condition and looked a little higher class. He was coarse about the head, which always is an indication of poor character, he lacked in heart girth, was poor in the crop and deficient in many points that indicate the high class beef-bred animal. But, he "came from Iowa."

I went into one town in Sanpete and was told that a man who had recently passed through that section selling bulls had told them that all the breeders in Cache valley were going into shorthorns and especially the dual purpose type—that they were selling their dairy cattle for anything they could get and buying the kind of bulls he was selling. These people did not tell me why this particular individual did not stay in Cache valley and sell the stuff he had, instead of leaving such a lucrative field for one so distant as Sanpete.

I have inquired in Cache valley for some of those cheap dairy cattle. I thought Nelson brothers might have some. Everyone knows these boys. They had been quoted as closing out their Holsteins and going into beef. I don't think Parley will object if I quote here his recent letter to me saying that they had decided to retain in their herd all cows and heifers now on the farm. The class of stuff that was being offered to the Sanpete people by this man who was so misrepresenting other sections was an inferior lot. It was even a reflection on the good sense of the Sanpete people to take that class of stuff into their country and his misstatement about conditions in other parts of the state should not only have aroused suspicion about their quality but stamped him himself as belonging to the scrub variety. Look out for the pure-bred scrub.

ALFALFA PASTURE IN PORK PRODUCTION.

No one living on the irrigated lands of south Idaho questions the splendid returns from alfalfa when grown for hay and for seed production. Until the experiment substations began the investigation, however, no data were available on the value of alfalfa pasture in pork production. The results of pasture work at Gooding and Caldwell for the 1916 season are now available. On the Gooding substation 21 pigs grown on the station farm were turned into one-half acre of alfalfa pasture early in the season. They were kept on the pasture 131 days. They consumed in that time in addition to the pasture, 3284 pounds of grain and 1878 pounds of skim milk. They gained 1362 pounds in weight. The hogs were sold for \$8 per cwt. After making an allowance of \$1.75 per cwt. for the grain fed and twenty cents per cwt. for the skim milk fed, the net returns from the alfalfa pasture alone were \$47.74, equivalent to \$95.18 per acre.

On the Caldwell substation 6 sows and 33 pigs were turned in on one acre of alfalfa pasture early in the season. They were fed 25 pounds of barley and 140 pounds of skim milk daily and had access to running water continually. The 33 pigs on August 11 showed a gain of 1211 pounds. Making allowance for the barley and milk consumed, the net returns on this one

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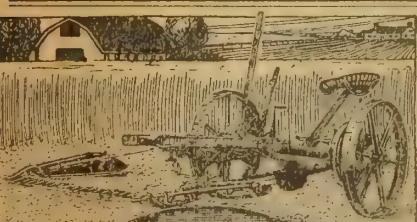
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acre of alfalfa pasture from the pigs alone (pork valued at eight cents) were \$70.80. 588 pounds of cured hay were taken from the pasture and it should be given credit in addition for the maintenance of the six sows.

Data of this nature call attention in a striking manner to the money value of alfalfa grown for purposes other than for feeding as hay or for seed production. J. S. JONES.

If you have a show boar that you think too heavy and want to reduce him in weight, do not do it by the starving method, but try the exercise. It will not reduce his vitality and make him a more sure pig getter.

Cut out the old dead wood of the currants and thin out new shoots if they are thick. Leave no more than can have plenty of room to grow.

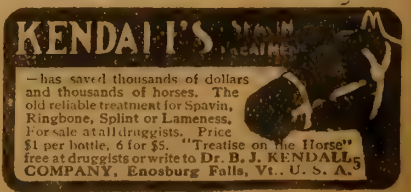
Do not prune spring-flowering shrubs until after they flower. Those that flower in autumn may be pruned now.

THICK, SWOLLEN GLANDS

that make a horse Wheeze, Roar, have Thick Wind or Choke-down, can be reduced with

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POULTRY

STORING EGGS ON THE FARM

Every farmer should store the surplus eggs at the time that prices are low.

There are two distinct periods of egg production; late winter, spring, and early summer is the heavy-producing season, while late summer, fall, and early winter is the light-producing season. Prices are naturally governed by the production, and one of the most certain things imaginable is that eggs are low in price during the former period and high during the latter period.

The farmer produces 86 per cent of the poultry and eggs of the United States, hence should be more directly concerned about prices than anyone else. There are not enough eggs produced in the United States to supply the demand if they were equally distributed throughout the year.

There is only one means whereby the production can be uniformly distributed and that is the storage. Cold-storage eggs do not find favor in the average home. They are more or less stale. This condition however is not due to the storage.

Eggs start incubation at about 70 degrees Fahrenheit, but while this temperature is not sufficient for complete incubation, it does start decomposition. During the time when cold-storage concerns are laying in their supply, the farmers are, as a rule, very busy and neglect gathering and marketing the eggs regularly.

The average egg that goes in to cold storage is from ten days to three weeks old when it reaches the cold storage man. This condition could be overcome by storing the eggs on the farm. The eggs are produced in a natural package and if properly stored will keep for months in perfect condition.

Water glass has been in successful use for a number of years and is a splendid method of storing eggs.

To fifteen parts of water that has been boiled and then cooled, add one part water, glass and stir very thoroughly, and the solution is ready for use. When the vessel is full there should be about two inches of the solution covering the eggs. If the air cell end of the egg is pricked with a pin or tack it will not crack when boiled.

Water glass is very high at this time and there is a tendency on the part of druggists and has been for a number of years to dilute it and consumers find it unreliable. See to it that your druggist gives you good quality. One objection to water glass is that it is sloppy to use.

Eggs should be fresh when stored. Infertile eggs are best. An infertile egg will keep for weeks and months under conditions that will spoil a fertile egg in a very few hours. The males should be taken away from the hens as soon as the breeding season is over.

It is nice to store them in egg cases or egg cartons. If the producer does not care to go to the expense of procuring the cartons or cases, any kind of box will do. The egg should be stored with the little end down. This will prevent the yolk from spreading out. Place the eggs in a cool cellar.

If you have never stored your cheap eggs, start this year. Remember that eggs do not improve in storage. If bad eggs are put in storage they will not improve but will likely be worse when taken out.

This is the time of year to preserve eggs for home use. About half of the eggs of the whole year are produced during March, April, May, and June. Eggs laid at this season are the best for preserving.

Eggs to be preserved should preferably be infertile, and only a day old. They should also be clean, but not washed, as washing makes them porous allowing the solution to enter. The most successful and cheapest method of preserving is in water glass (sodium silicate). One gallon of

sodium silicate, about 50 cents worth, will when added to 15 times as much water, which has been boiled and cooled, be enough to preserve 50 dozen eggs. The solution should be prepared and put in the vessels in a cool place, then the eggs added as they are gathered. There should be at least two inches of solution covering the eggs.

CAREFUL HANDLING REDUCES DIARRHEA LOSSES

Pren Moore.

By observing the methods of correct poultry raising, the loss from diarrhea in little chicks can be greatly reduced. Ninety-five per cent of the diarrhea is not due to the white diarrhea germ but to other causes. Among them are the following:

A little chick is apt to become chilled, which will cause it to have diarrhea. This chilling may result from indiscreet use of the nursery tray of the incubator. For instance, a correspondent recently wrote that the nursery tray on his machine was

registering 80 degrees, or 23 degrees below the egg tray. If newly hatched chicks were put in a temperature of 80 degrees, they would become chilled and diarrhea probably would follow.

Again, many are careless in transferring chicks from incubator to brooder in a cool room and they fail to warm the container which the chicks are to occupy. The hands should be warm and the cloths with which the chicks are covered should also be warm. After they are placed in the brooder, every precaution should also be taken to keep them warm. The brooder should be kept at a temperature of 95 to 100 degrees the first week and reduced about one degree a day until the right temperature is reached. They should be kept warm enough so that they do not crowd at night and they should always be afforded a cool place to which they may go if they desire. Chicks raised with the hen should not be let out until the grass has become dry because a wet chick is apt to become chilled.

Another cause of diarrhea is the overheated incubator or brooder which may interfere with the natural absorption of the yolk and cause trouble after the chicks are about a week old.

Then too, diarrhea may be caused by feeding chicks musty or sour food. Corn meal which has become heated in the sack or bin and which has a musty odor should never be used for chick feeding.

Diarrhea may also be caused by allowing the chicks to scratch in musty chaff. If this occurs, spores will be imbedded in the lungs of the chick and a white diarrhea with a high mortality will result.

In some cases, diarrhea may be caused by the white diarrhea germ which is said to be present in the ovary of the mother hen and, if this is the case, extreme sanitary precautions should be observed. Care should be taken to use only the most vigorous breeding stock available. The incubator should be cleaned and disinfected between every hatch and the brooder should be disinfected every time a chick dies. The incubator door should be darkened at hatching so that healthy chicks will not pick up the droppings of diseased chicks. The drinking water should be colored a claret red by the use of potassium permanganate and the chicks should be fed sour skim-milk as soon as they begin to drink.

Even Fairbanks, Morse & Co. have to do it—!

The first "Z" engine announcement in the Fall of 1915 almost revolutionized the farm engine business. Certain it is—the "Z" revolutionized farm engine values. Within the first twenty-seven days—over sixteen hundred new F. M. & Co. dealers saw the real service they would render their customers by selling "Z" engines. The close of the first year resulted in a distribution of over seventy thousand engines in 1½—3—6 H. P. sizes to satisfied farmers who knew engine quality when they saw it on the dealers floor.

After perfecting the "Z"—thru modernizing our large

engineering and quantity production facilities—we knew the demand would be big. So we bought materials and accessories in almost unheard of quantities. But enormous as were our purchases—they were depleted sooner than our biggest expectation.

Our financial resources—and large consumption—make it possible for us to continue to enjoy exceptional advantages in getting trainload after trainload from primary sources of supply and the situation today with us is better than the average. The one or two price advances to date were small indeed compared with the increases we had to pay. But the lines are sharply tightening. Raw materials are getting scarcer and scarcer—prices we must pay are jumping by leaps and bounds. This means price advances to you from time to time, because "Z" engine quality will be maintained. At today's prices this engine marvel is—as it always has been—"a wonder at the price." So buy now. At least—this is our advice.

The Service You Get When You Buy From Your Local Dealer

Go To Your Dealer and See the "Z"

Inspect it. Compare it. Match it point by point. Have him show you the features that make it the greatest engine value offered. You'll buy it.

KEROSENE

THE Z ENGINE

"More Than Rated Power and A Wonder At The Price."

Simple—Light Weight—Substantial—Fool-proof Construction—Gun Barrel Cylinder Bore—Leak-proof Compression—Complete with Built-in Magneto. Quick starting even in cold weather. Low first cost—low fuel cost—low maintenance cost. Long, efficient, economical "power service."

Fairbanks, Morse & Co., Chicago

All Fairbanks-Morse dealers sell "Z" engines on a zone carload low freight basis. If you don't know the local dealer, write us.

OBSERVATIONS REGARDING
SUGAR BEET RAISING
(Continued from page 2)

crease in price paid for beets this year, the net returns for each ton delivered at the factory should be about \$4. At this rate an acre-yield of fifteen tons would be worth \$60; a twenty ton crop \$80.

The production of beets is not longer a problem under proper conditions and skillful management, but even though the soils are very fertile and the climate ideal in some sections of Utah, the beet growers in this state have serious problems confronting them. Maintaining the fertility of the soil and eradicating pests which attack the beet crop are our present problems. For every pound of fertility taken from the soil by any crop, an equivalent amount should be returned if the productivity of the soil is to be permanent. Replacing the plant food elements in the soil by applying barn-yard manure is the cheapest and most profitable method. This necessitates the keeping of livestock, and in order to produce forage for feeding purposes in the most economical and approved manner rotation of crops is required. The only practical method of controlling the pests—either insect or disease—which attack the beet is by rotation of crops and thorough cultivation. The nematode, the most serious of all pests, is controlled only by rotations of resistant crops. Grasshoppers may be partially controlled by thorough spring cultivation.

The growing of sugar beets is bringing a new era of prosperity, and is building up a more permanent system of agriculture in our state. For these reasons, too much encouragement cannot be given to promote the growing of this crop.

GOOD LAND FOR SALE

I have two twenty-acre tracts, two forty-acre tracts and a ninety-acre tract of land on the west side of Salt Lake Valley, under the new canals, for sale this spring. Prices range from \$80 to \$125 per acre with water. Easy terms for purchasers. Last year I sold more than 2,000 acres of this land to residents of Salt Lake County. Please write or leave inquiries with the Utah Farmer, Salt Lake City, or Lehi office. Francis W. Kirkham.

SEEDS

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Send Today For Our Big
FREE Catalog.

Vogeler Seed Co.

Salt Lake City, Utah.

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FARMS

To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS

Six or seven 5-acre tracts of land located near Salt Lake City, ranging in price from \$1500 to \$1850 for the five acres. We can accept a down payment of \$300 on these and give four or five years on the balance at 7 per cent interest. If you are looking for a small tract of land, near the city, to raise your garden stuff on, call at our office and we will talk the matter over with you.

10, 30, 40, 60 or more acres of land in Cache valley, which we can sell you at from \$100 to \$150 per acre, 10 per cent of purchase price down at time of purchase and ten years on the balance at 7 per cent interest. If you are looking for one of the best farms in Cache valley, it will pay you to investigate this at your earliest convenience. Either write or call at our office and we will be glad to give you full particulars pertaining to this property.

We still have several acre-tracts on 14th South and West Temple, which we can sell at \$450 per acre; \$45 down at time of purchase and \$45 each year at 7 per cent interest. If you will call at our office, we will be glad to go out with you to look this land over.

In southern Idaho we have a number of farms which we are selling on very reasonable terms. These farms range from \$50 to \$100 per acre, depending upon the location and improvements. If you will kindly write us or call at our office, we will be glad to give you a folder describing this property. These farms can be had on very easy payments; from \$240 to \$1000 at time of purchase and eight to ten years on the balance at 6 per cent interest.

5 and 10-acre tracts, immediately adjoining the town of Tremonton. For sale on very easy payments. Will take as low as \$200 down, with ten years on the balance.

If you want a farm or ranch, large or small any place in the west, we can satisfy you. We trade farms for city homes.

KIMBALL & RICHARDS,
"Land Merchants,"
56-58 Main Street,
Salt Lake City, Utah.

Phone—Wasatch 963
FARM AND RANCH DEPARTMENT.

FOR SALE

In Boxelder County, 50 miles from Brigham City, 960 acres of land, 500 under cultivation, 400 in fall wheat, about 40 alfalfa, 12 head horses, harnesses, machinery, buildings, well and equipment. Price and terms reasonable. For particulars write

MILLER BROS. FARM CO.
394 S. M., Logan, Utah.

50 acres at Elberta, Utah, very fertile, well adapted for raising beets, alfalfa, fruit, garden truck and all farm products. Prior water right at \$1.00 per acre if used. Can be purchased for \$75.00 per acre if taken quick. A good buy for the man that wants a small farm at a reasonable price. Write or see

W. C. ALBERTSON
604 Dooley Bldg.
Salt Lake City, Utah.

50 acres of the finest farm and garden land in the west. Located at Elberta, Utah. Will make a very suitable place for the man that wants a small farm at a reasonable price. Well adapted to raising any of the farm products, garden truck, alfalfa and beets. Within a short distance of two good mining camps affording a fine market for garden vegetables. On railroad giving excellent shipping facilities. Good schools adjacent. Prior water right at \$1.00 per acre if used. Look at this before you make a selection. Write or see

W. C. ALBERTSON
604 Dooley Bldg.
Salt Lake City, Utah.

FOR SALE

640 acres with 168 acres wheat, 50 acres alfalfa, well, fence, 6 horses, harnesses, implements, etc.

800 acres, 320 pasture, 235 acres in wheat and some horses, etc. Will sell part or all. Price and terms reasonable. For further information, write

N. E. MILLER
439 So. Main, Logan, Utah.

Farm Loans

CURRENT RATES

FAVORABLE TERMS

LIBERAL AMOUNTS

ALWAYS IN FUNDS

MILLER & VIELE

803-807 Kearns Building
SALT LAKE CITYThree Splendid Buys in
Idaho Farms.

These Idaho properties are located in one of the finest farm districts and are all close to open range.

160 acres all in cultivation, about half in alfalfa and clover; good 8-room house, barns, cattle sheds, etc.; fenced and cross fenced; excellent decreed water right. Price \$9,500 including all machinery, about 20 head of cattle and 6 horses.

160 acres, close to railroad station, all in cultivation; has good house, barn blacksmith shop, three granaries, sheds, cattle barns, etc. Price only \$4,500.

320 acres, about half in cultivation, with some alfalfa. 160 acres deeded, remainder homestead; a fine stock proposition. Price for this half section, only \$3,500.

Federal Land Company

Ogden

Utah

\$3,750.00 takes a 50 acre farm at Elberta, Utah. Fine Soil, very suitable for growing Alfalfa, Fruit, Beets, Grain, Garden Truck or any farm products. Good water right at a very reasonable rate. Adjoining to good schools and is located on railroad. Suitable terms can be arranged. This is a real buy for the man that wants a small farm at a good price.

W. C. ALBERTSON
604 Dooley Bldg.
Salt Lake City, Utah.

FREE FARM LANDS

The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our Committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah.

RELIABLE FARM BARGAINS.

\$450 per acre will buy one acre of first-class garden land. On the 5-cent car line, immediately adjoining the city on the south. This land can be had for a small payment down and a long time on the balance. If you are living in the city and want to get out in a suburban home, this will appeal to you.

40, 80, or 160 acres in southern Idaho. The soil in this tract is first-class and there are 4 acre-feet of water per acre, the maintenance on the water being very low. It is located on the Oregon Short Line railroad and the state highway passes through the tract. The price of this land ranges from \$60 to \$100 per acre and can be sold for 10 per cent of purchase price and ten years on the balance at 6 per cent interest on deferred payments. If you are interested in purchasing a farm, investigate this proposition. We will gladly mail you a folder giving full details about this property upon request.

700 acres of land in Cache valley which we consider to be some of the best soil in that district. We have purchased this under such conditions that we can resell at a very low price and on very easy payments, 10 per cent at time of purchase and ten years on the balance at 7 per cent interest. If you are looking for a farm, we would advise you to investigate this property before purchasing elsewhere.

We have recently come into possession of several of the choicest farms in the Bear River valley. We are now offering these farms at a price of from \$135 to \$200 per acre, depending upon the location and the improvements. This land is all under a high state of cultivation and is all under irrigation from the Bear River Valley canal. It can be had for a 10 per cent down payment and ten years on the balance at 7 per cent interest.

720-acre ranch in good district of Nevada. 300 acres under cultivation, all irrigated. Fine water from mountain streams, 8-room house, stable, sheds, blacksmith shop etc. 45 head cows, 20 head horses, all necessary machinery and implements. Located four miles from railroad station. Forest reserve for pasturing cattle adjoins ranch. Good family orchard. Two miles to school. Price complete, \$30,000. Part cash, or will trade for Utah property. Good terms.

2½ acres at Bountiful with 3-room house. Fine truck garden soil. Large strawberry patch. Flowing well. All fenced. Chicken coops, sheds, cemented cellar, etc. Total price only \$2100. Good terms.

SPECIAL NOTICE: If you don't see what you want in this list, come in or write and tell us what you are looking for. We can get it for you and save you money. We trade farms for city homes.

KIMBALL & RICHARDS,
"Land Merchants,"
56-58 Main Street,
Salt Lake City, Utah.

Phone—Wasatch 963
FARM AND RANCH DEPARTMENT.

Insure Your Live Stock

against death from any cause

THE HARTFORD WAY

low rates no assessments

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22 Main Street

Salt Lake City, Utah

Farmers' Opportunity

Industrious farmers wanted to lease or buy land. Good location, rich soil, fenced and plowed, abundance of water, seed furnished, splendid climate. Address: 707 Kearns Building, Salt Lake City, Utah.

For the Buyer

THE FARMERS' MARKET PLACE

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

W. LEGHORN AND R. I. RED EGGS AND CHICKS. WRITE US.

GUHAMA

BATES & SONS
POULTRY and FRUIT FARM
PROVO, UTAH, U.S.A.

BABY CHICKS

We are now booking orders for Spring Delivery in White Leghorns, Brown Leghorns, R. I. Reds, Barred Rocks and Black Minorcas. Anconas also.

THE ORLAND HATCHERY
Orland, Glenn Co., California.

4 BEST 4 EGGS 4 BEAUTY
R. C. Rhode Island Reds, White Wyandottes, S. C. Black Minorcas and White Leghorns.
Bred for Eggs and standard requirements. Better start right. Eggs guaranteed to hatch or replaced free of charge. Write for descriptive folder and prices.

E. C. BLANPIED
Box 29 Millford, Utah

LASHER'S HATCHERY IS NOW booking orders for baby chicks—White Leghorn our Speciality. We guarantee safe arrival and full count. Strong, vigorous chicks from the finest flocks of free range stock in the country. Write for 1917 price list and instructions on care of baby chicks. Lashers Hatchery, Petaluma, California.

BABY CHICKS

CAN FURNISH EACH AND EVERY week throughout April, May and June 10,000 White Leghorns, 200 Buff Leghorns, 1,000 Brown Leghorns, 1,000 R. I. Reds, 500 Barred Plymouth Rocks, 200 White Plymouth Rocks, 100 Buff Plymouth Rocks, 300 White Wyandottes, 200 Buff Orpingtons, limited number of Partridge Plymouth Rocks and White Orpingtons.

RAMSHAW, THE CHICKEN KING
Hy. 3048. 2415. 5th East
SALT LAKE CITY, UTAH

BABY CHICKS

All kinds, good stuff. Eggs for setting from Prize Winning R. I. Reds, \$1.50 to \$4.00. All kinds chickens handled. Agent for De Laval Separators.

OGDEN FEED CO.
J. H. Shafer, Prop.
Ogden Utah

FOR SALE

S. C. Brown Leghorn eggs for hatching from bred to lay strain. Free range stock. Prices: 75c for 15; \$3.75 for 100 delivered. Fertility guaranteed.—D. Stratton R. D. 1. Box 207, Provo, Utah.

EXTRA QUALITY White Leghorn chicks 10c each. Carefully linebred from MacFarlane, Young, Cyphers and Martin strains of foundation stock. Eggs \$1.50 per 15, \$2.50 per 30, \$5 per 100, \$50 per 1000. Acres of free range connected with our breeding pens, 20,000 feet under roof. Only Jubilee incubators used, disinfected every hatch. Don't save 2c per chick in buying and lose a dollar pullet in raising; get the best, and succeed. **NEWTON POULTRY FARM**, Dept. 8, Los Gatos, Cal. Catalogue free.

Baby Chicks

We offer baby chicks from the very best utility stock. Farm raised stock that you can depend upon. White Leghorns, 25 for \$3.00, 50 for \$5.25 and 100 for \$10.00. Barred Plymouth Rocks, per 100—\$15.00; per 50—\$7.75. Rhode Island Reds, per 100—\$15.00; per 50—\$7.75. White Plymouth Rocks, per 100—\$15.00; per 50—\$7.50.

VOGELER SEED COMPANY
Salt Lake City, Utah.

Send for Butter Wrappers today.

FOR SALE

Eggs for Hatching. R. C. Brown Leghorn and Black Langshan. \$1.50 for 15; \$7.00 for 100. Fertility Guaranteed.

J. H. STUART
Wellsville, Utah. Box 73

FOR SALE

Single Comb White Leghorn Hatching Eggs from bred to lay stock. Our thirteenth year. Prices right.

MODEL POULTRY FARM
Corning California

YOUR OPPORTUNITY

200-290 Egg. Early Maturing, Winter Laying Leghorns. Anconas, Reds; W. Barred Rocks; W. Buff Wyandottes; Buff Orpingtons. \$3-\$10 yearly profit per hen. During May and June: Eggs half, chicks fourth off. Few pens all breeds, at bargain to make room. Guarantee you profit with feed high.

J. BEESON
Pasadena California

ALFALFA SEED

Direct from the Grower, save dealers profit. No. 1 grade, 13c; No. 2 grade 8½c per pound. In lots of 1000 pounds or more 5 percent discount. Samples on request.

MARCUS SKEEN
Oasis Utah

WANTED to hear from owner of good farm for sale. State cash price and description. D. F. Rush, Minneapolis, Minn.

FOR SALE

Two imported registered Percheron Mares, also several Purebred Jersey Bull Calves from heavy producing imported Island Stock. Apply

STATE MENTAL HOSPITAL
Provo Utah

SAVE MONEY ON YOUR LUMBER BILL. WRITE US. PACIFIC COAST SAWMILL COMPANY. Portland, Oregon.

RAG APPLE KORNDYKE 13TH

BULLS FOR SAL

From A R O dams which we are offering at reasonable prices, write us.

NELSON BROS.
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SHORTHORN BULLS

Two choice Shorthorn Bulls for sale. Year old and nine months. If you want a good one here is your chance, otherwise don't answer.

DR. OTTO NIELSON
Ephraim Utah

FOR SALE

First class Registered Holsteins Bulls, ranging in age from two months to one year. Highest class breeding. Farmers' Prices.

STATE INDUSTRIAL SCHOOL
Box 41, Ogden, Utah.

Lumber, Millwork, Fence Posts, wholesale mill prices. Send carpenter's list for freight prepaid estimate. Keystone Lumber Company, Tacoma, Washington.

Sargent's Int. Nat'l. Auction School. School of proved ability development. Circular Free. Write today. Denver, Colo., Spokane, Wash., or Riverside Cal.

THE CALL FOR GARDENERS
(Continued from page 7)

potatoes, and the rest; these should be the crop of everybody with land enough to bend over in. Those vacant lots, the sorrow of single taxers and often the eyesore of prim villages and suburbs, should be made to blossom like the early rose.

Selectmen, town committees, town trustees, and councilors, spy out the vacant cultivatable land and see that it is tickled with the plow. Commu-

ters, who farm for exercise and pleasure, or say you do, this is the spring when you need to farm for business. More ground for garden this year; and garden for vegetables, not for ornament.

Why not do something necessary, fruitful, a public service? A great deal less space this year, if you please, for flowers to arouse your neighbor's envy and take the dust of motor cars. A potato vine in place of peonies this year. Peace or war, the country has to be fed. Will you do your part to feed yourselves and it? Less sweep of lawn, fewer beds of flowers; the potato parterre's the thing this spring.

—New York Times.

Duroc Jersey Boars

Boars chuck full of Grand Champion Breeding. Bred the same way as our Utah State Fair Winners. We have a great lot of top spring Boars and are offering them at bargain prices. Every Boar guaranteed to please or money refunded. Write us today.

RICHARDS LIVE STOCK CO.
Virginia Idaho
The West's Best Durocs.

900--HEREFORDS--900

I have at this time out of my herd of 900 head of registered Herefords, 300 head of registered bulls ready to go, in ages from eight months to three years, including both those of my own breeding, and bulls bought from the best herds of Iowa, Illinois Minn., and Missouri, all with big bone, lots of size and quality and splendid blood lines. I have an especially strong lot of yearlings and two year olds, among which are many great herd bull prospects. Whether you wish bulls for registered herd or for range use I can fill your wants.

If you want the best in range bulls or are looking for a high class lerd bull, and want to buy them at a price that you can afford to pay come and see my cattle. I will sell in lots to suit purch sers.

Located on the main line of the Santa Fe and train schedules are convenient for seeing cattle between trains, also have direct transfer connection with the Fort Worth and Denver for Pueblo, and all lines west.

C. O. KEISER
Canyon Texas

Stop Raising Worms

When it is so Easy to Rid your ORCHARD and Garden of all such Pests.

CORONA DRY ARSENATE OF LEAD solves your insect Problems. Write today for Free Booklet "How to Control Orchard and Garden Pests."

PORTER-WALTON CO.
Seed and Nursery Specialists
SALT LAKE

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LOS ANGELES

THE MECCA,
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THE SALT LAKE ROUTE

Three Good Trains, Daily.

The Overland Express
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Excursion tickets, with long limits and diverse routes, on Sale daily.

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DUNHAM

CULTI-PACKER

TRADE MARK REG.

Culti-Pack Growing Crops

Not only your corn, but your wheat, oats and similar crops can be kept in prime growing condition by going over the growing plants with the Culti-Packer.

This tool firms the soil about the roots, breaks up crusts or lumps, and stirs the surface like a cultivator. Farmers use it on wheat or oats or corn till several inches high with absolutely no damage and wheels can be quickly detached for straddling larger corn.

See the Culti-Packer at your John Deere dealer.

THE DUNHAM CO., 309-337 FIRST ST.,
BEREA, OHIO



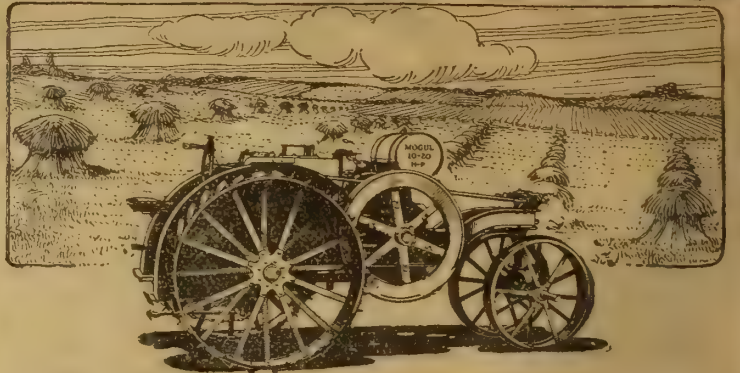
Quick detachable wheels removed from Culti-Packer for cultivating corn until it is a foot high.

FREE

"SOIL SENSE"

48 pages—100 field photographs on soils, seed beds, cultivation, etc.

Ask your dealer for it—or write direct.



The Mogul Kerosene Tractor in a New Size

IN 1915 we introduced the Mogul kerosene tractor in a two-plow size. It met with instant and continued approval, so much so that it has far outsold all other tractors of its rated horse power put together.

We now offer Mogul 10-20, the same popular and efficient type as Mogul 8-16, enlarged, improved, built to draw three plows instead of two. No changes have been made in design except the few indicated by experience, or made necessary by the higher power.

The engine is larger, but it is the same efficient, slow moving, kerosene-burning type. The transmission is changed to give two forward speeds instead of one. Mogul 10-20 travels 1.8 and 2.5 miles per hour. The same simple, safe chain drive is used, the same good force feed mechanical oiler. In all essentials Mogul 10-20 is the reliable, dependable, economical Mogul tractor you have heard so much about from your neighbors, or know so well by experience.

Booklets and folders with full descriptions of the new Mogul 10-20 are now ready and will be sent by return mail on request. When you write for them, address

(Incorporated)

International Harvester Co. of America
SALT LAKE CITY

Champion Deering McCormick Milwaukee Osborne Plano



Popular Favor and Revenues

The success of any utility is largely dependent upon two prime factors—popular favor and adequate revenues.

One of our Company's most highly prized assets is the confidence which the public has in our policies, our methods and our sincere desire to serve the public well.

But as to the factor of revenues, we have our problems. The territory in which we operate contains fewer persons per square mile than any other similar area in the United States. This means that we have an abnormally high investment per unit of population or per subscriber.

The more plant per subscriber, the higher is the maintenance cost per subscriber, and the depreciation charge per subscriber is proportionately high.

The problem is, while providing facilities ample to give standard and adequate service throughout our territory, to secure sufficient revenues to meet our total charges and to provide a reasonable return upon the large investment involved.

**The Mountain States Telephone and
Telegraph Co.**

CATERPILLAR

Reg. U.S. Pat. Off.

Lowest Cost Per Working Hour

Price, in the purchase of a tractor, should be a secondary consideration. Of chief importance are the tractor's dependability, its ability to do all sorts of work, under all sorts of conditions, with a low operating and upkeep expense.

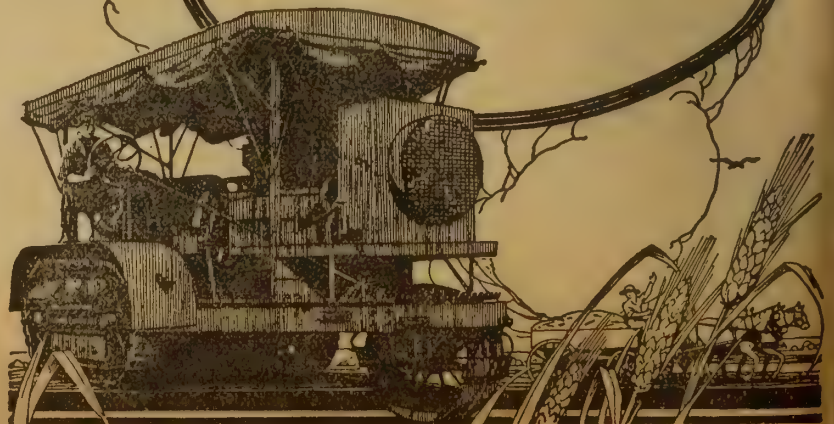
Many years of Caterpillar operation have proved its cost lowest, not only per actual working hour, but also per acre worked. Statistics from hundreds of Caterpillar owners prove this to be so.

Power to pull an unusual number of plows at an unusual depth, versatility in operation, construction that minimizes delays and expense for repairs, make Caterpillar costs lowest, and Caterpillar profits largest.

We will gladly send you details on all models

Holt
MANUFACTURING CO., INC.

Stockton San Francisco Los Angeles Portland Spokane



IT HELPS US AND PROTECTS YOU.

When you answer the advertisements in the Utah Farmer always mention that you saw them in our paper. Many of our advertisers judge our paper by the number of replies they receive from our readers. It is a protection to you and a help to us. Answer the advertisements in the Farmer and deal with the people who advertise with us.

UNIVERSITY OF UTAH
MAY 10 1917

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

VOLUME XII; No. 40

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH

MAY 12, 1917

Important Factors In Dry-Farming

By J. W. Paxman, Extension Specialist in Dry-Farming for the Utah Agricultural College.

Soon after it was demonstrated that dry-farming could be practiced to advantage and the cause received considerable exploitation, there was in evidence a strong demand for dry-farm lands. At the same time it was recognized that the limited amount of land subject to entry under the old homestead law, (160 acres) was not sufficient to sustain a family, because of the increased amount of acres needed to produce adequate crops. The matter of bringing immense areas into profitable use that otherwise were practically useless, if sufficient acreage could be given the home-

seeker, was brought to the attention of congress by the Hon. Reed Smoot, Senator from Utah, and the Federal Government passed in 1909, what is called the enlarged homestead act, permitting 320 acres to be entered as a homestead, where the lands were "arid" in character and where water for irrigation could not be supplied at a reasonable cost.

In this form of an entry then it is presumed the 320 acres becomes the "Homestead" of the entryman, and it is from this view point that we shall discuss the "needs in developing a dry-farm"—meaning the transforming

of the "arid" or "non-irrigable" 320 acres into a paying farm, either with or without the home. We shall not discuss the subject from the angle of the speculator, whose only interest is to own the land and hold it for speculation. No very great pride can come to a man by merely owning or possessing title to the land. His real pride comes in the utilization of it, by development, improvement and achievements with it.

It is no small task for man to undertake the subjugation of 320 acres of brush lands and lay for himself and family a competence for

life; and yet that's the expectation of "Uncle Sam" when he rewards our citizenship with the generous 320 acres. The possession of this birthright and the proper use of it calls for the existence of certain definite factors needed in the process of its development and which this article is intended to bring into consideration.

(1) Quality in the Man.

Not every man can make a success as a farmer, any more than every man can make a successful banker. One of the qualifications needed in (Continued on page 5)



WE HAVE THOUSANDS OF SUCH ACRES THAT SHOULD BE BROUGHT UNDER CULTIVATION.

From present indications the year 1918 will be short of food products even more serious than this year.

By Dry-farming we can increase our grain crop very materially. Thousands of acres should be plowed and seeded this year to fall grain. With wheat selling around two dollars a bushel dry-farming should be profitable. You can serve your country by increasing the food products, at the same time it should bring you good returns for your labor. Two very good reasons why we should do more dry-farming.

Government Crop Report

May 8, 1917.

A summary of the May crop report for the State of Utah and for the United States, as compiled by the Bureau of Crop Estimates (and transmitted through the Weather Bureau), U. S. Department of Agriculture is as follows:

Winter Wheat.

Utah.—May 1 forecast 5,260,000 bushels; production last year (final estimate) 5,000,000 bushels; two years ago, 6,125,000; 1910-14 average, 3,948,000 bushels.

United States.—May 1 forecast 366,000,000 bushels; production last year (final estimate) 481,744,000; two years ago, 673,947,000; 1910-14 average, 494,654,000 bushels.

Rye.

Utah.—May 1 forecast, 182,000 bushels; production last year (final estimate) 144,000; two years ago, 202,000 bushels.

United States.—May 1 forecast 60,700,000 bushels; production last year (final estimate) 47,383,000; two years ago, 54,050,000 bushels.

Meadows.

Utah.—May 1 condition 94 per cent; compared with the ten year average of 94 per cent.

United States.—May 1 condition 88.7 per cent; compared with the ten-year average of 87.9 per cent.

Pasture.

Utah.—May 1 condition, 79 per cent; compared with the ten-year average of 92 per cent.

United States.—May 1 condition 81.9 per cent; compared with the ten-year average of 85.2 per cent.

Spring Plowing.

Utah.—Per cent done to May 1, 1917, estimated 65 per cent, compared with 87 per cent May 1 last year, and 79 per cent, the ten-year average.

United States.—Per cent done to May 1, 1917, estimated 72.4 per cent, compared with 70.4 per cent on May 1 last year and 69.3 per cent, the ten-year average.

Spring Planting.

Utah.—Per cent done to May 1, 1917, estimated 60 per cent, compared with 81 per cent May 1 last year and 75 per cent, the ten-year average.

United States.—Per cent done to May 1, 1917, estimated 58.7 per cent, compared with 56.7 per cent on May 1 last year and 56.3 per cent the ten-year average.

Hay.

Utah.—Old crop on farms May 1, estimated 9,000 tons, compared with 33,000 a year ago and 160,000 two years ago.

United States.—Old crop on farms May 1, estimated 12,500,000 tons, compared with 14,452,000 a year ago and 10,797,000 two years ago.

Prices.

The first price given below is the average on May 1 this year, and the second, the average May 1 last year.

Utah.—Wheat, 211 and 87 cents per bushel. Corn, 196 and 78 cents. Oats, 83 and 52 cents. Potatoes, 235 and 106 cent. Hay, \$28.80 and \$12.20 per ton. Eggs, 29 and 17 cents per dozen.

United States.—Wheat, 245.9 and 102.5 cents per bushel. Corn, 150.6 and 72.3 cents. Oats, 71.0 and 42.6 cents. Potatoes, 279.6 and 94.8 cents. Hay, \$14.44 and \$12.22 per ton. Eggs, 30.0 and 18.1 cents per dozen.

Crop Summary.

The late spring has been a great handicap to Utah farmers in their effort to do their bit towards augmenting the world's supply of food. Progress of all farm work has been slow. Less plowing and sowing has been accomplished up to date than for many years at the same season. Storms and cold have interfered with shearing and lambing. Pasture is improving but is still very short when it is most in demand due to lack of hay. Utah has never known such hay shortage as has faced the farmer this spring. Meadows are in good condition except for lateness in starting. In some sections winter wheat suffered rather severe winter killing but those sections where the acreage is largest seem to have suffered least.

Where winter killing was very bad the fields are being resown to spring grain. The general condition of winter wheat is very good.—Edward C. Paxton, Field Agent for Utah.

Weather Summary.

The temperature for the month of April averaged 41.8 degrees, which is 5.4 below normal, and the lowest temperature on record since 1896. The precipitation averaged 1.77 inches, which is 0.50 inch above normal. The month as a whole was very unfavorable for farm work and the advance of crops. Ranges were backward, and stock in not the best of condition. Planting has been progressing slowly. Some winter wheat was killed. The cold weather held back the fruit blossoms, and no damage was in consequence done to them. At the end of the month apricots were in full bloom, and some early cherries were out; peaches and apples were just showing pink and white petals.—Alfred H. Thiessen, Meteorologist.

World Facing Bread Famine

Our government has just issued an official wheat crop estimate which shows the yield will be the lowest in thirteen years.

The report shows that the world is facing a bread shortage and unless the United States cuts its present consumption, probably will produce only enough wheat this year to supply its own population.

The forecast, compiled by the department of agriculture on conditions May 1, put this country's winter wheat yield at 366,000,000 bushels, the smallest in thirteen years. There will be no estimate of spring wheat acreage until July, but with a crop of 250,000,000 bushels, which is higher than the average, this country would grow this year a total of only 616,000,000 bushels. The normal American consumption, with seed requirements, is put at slightly more than 600,000,000 bushels.

The country's greatest spring wheat crop was 352,000,000 bushels, produced in 1915. The five-year average from 1910 to 1914 is 234,000,000 bushels. The estimated production this year of 663,000,000 bushels short of last year's poor crop and 308,000,000 below that of 1915, a bumper crop. It is 129,000,000 bushels less than the average for the preceding five years.

Reserve Stock Low.

Reserve stocks this year are said to be lower than at any previous time at this season. The visible supply is put now at 30,000,000 bushels, with a somewhat larger invisible stock. The lowest visible stock ever reported in the United States was 6,000,000 bushels on July 1 two years ago. When harvesting of the new crop begins in July of this year it is estimated that the reserve will be even lower than that.

The allies' wheat requirement for the coming year is put at 500,000,000 bushels as a minimum. The United States will be asked to supply more than half that amount. Wheat crops in other parts of the world are poor. The Argentine crop failed and home consumption will require the entire yield. Canada's production is confined chiefly to a spring crop of normally about 200,000,000 bushels, much of which is available for export.

Vast Exports.

Since the war started America has exported to Europe vast quantities of wheat, reaching a high mark of 332,000,000 bushels in 1915. Last year the total fell to 243,000,000 bushels. Before the war it ran slightly less than 100,000,000 bushels.

In a statement accompanying its report today the agricultural department declared that, although the winter wheat crop condition is the poorest on record, crop conditions otherwise are favorable.

"The extent of plowing and plant-



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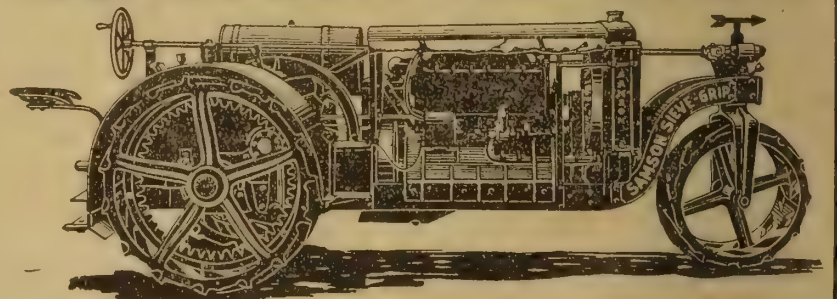
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This tractor delivers 12 horse power at the draw bar 25 horse power at the belt, burns kerosene or distillate, pulls three fourteen inch moldboard plows eight to ten inches deep at two and one-half miles per hour averaging one acre per hour on a fuel consumption of two and one-half to three gallons of fuel per acre plowed. Weight 5700 lbs. Price \$1,450.00 delivered on cars at Salt Lake. Tractors on hand for immediate delivery.

UTAH IMPLEMENT-VEHICLE COMPANY
SALT LAKE CITY

ing done by May 1," the statement said "was above the average. In 1912 the winter wheat crop fell below 400,000,000 bushels, the lowest since 1904, but notwithstanding this low production of winter wheat the spring wheat crop and total production of all crops in that year was the largest on record."

The department is making every effort to educate the American people to a greater use of cornmeal for bread.

Corn is America's big crop, but except in the south it never has supplanted wheat for bread. Department officials believe America must turn to corn to release wheat for shipment

abroad if the allies are to be fed and Germany is to be defeated.

In the face of a threatened world food shortage, the American winter wheat crop shows the lowest condition recorded since 1888 and promises a smaller yield than any other since 1904.

Agricultural conditions otherwise are good, the department announced, and it is recalled that although the winter wheat crop of 1912 showed an equally discouraging outlook the total production of crops that year was the greatest on record.

(Continued on page 14)

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VOLUME XII.

LEHI, UTAH, SATURDAY, MAY 12, 1917

No. 40

Drainage of Irrigated Farm Land

By C. F. Brown, Civil Engineer

Plow Up the Old Alfalfa Fields

Charles Harris, Salt Lake County.

In taking up this subject, I desire to do so under four heads:

- 1st.—The contributing factors producing needs of drainage,
- 2nd.—Preventative Measures,
- 3rd.—Construction Features, and
- 4th.—Results attending proper drainage.

When it is considered that there are something like 300,000 acres of land in the State of Utah once fertile and productive but now rendered unproductive by accumulations of alkali and surplus waters, there need be no excuse offered for discussing this subject as I have outlined it.

This means that there is from one-third to one-half of the total irrigable land in the State of Utah that is now unproductive on this account alone. This trouble is not confined to Utah; it is found in all of the arid states of America and in all irrigation projects the world over. It has long been a problem confronting practical irrigationists, and was recognized as early as 1875 by the English Government in attempts to reclaim the barren wastes of India, and a special inquiry was sent to Salt Lake City at that time for the purpose of studying the results following irrigation in this section. It had been reported that the Mormons had been very successful in applying water to the alkaline wastes of the American Desert without the resultant evils of alkali and seepage.

At this time the Mormons thought that they had solved the problem, but later years have shown that the country was too new, that the soils were deep enough to be taking care of the surplus waters that were applied in irrigation to such an extent that accumulations of water and injurious alkaline salts following irrigation had not yet arisen.

After from twenty to thirty years of irrigation, these results began to show very appreciably, and the injured areas have extended gradually year by year. Ten years ago, a movement was undertaken by the U. S. Department of Agriculture and the Utah Experiment Station for the purpose of developing the best methods of reclaiming these waste lands by drainage.

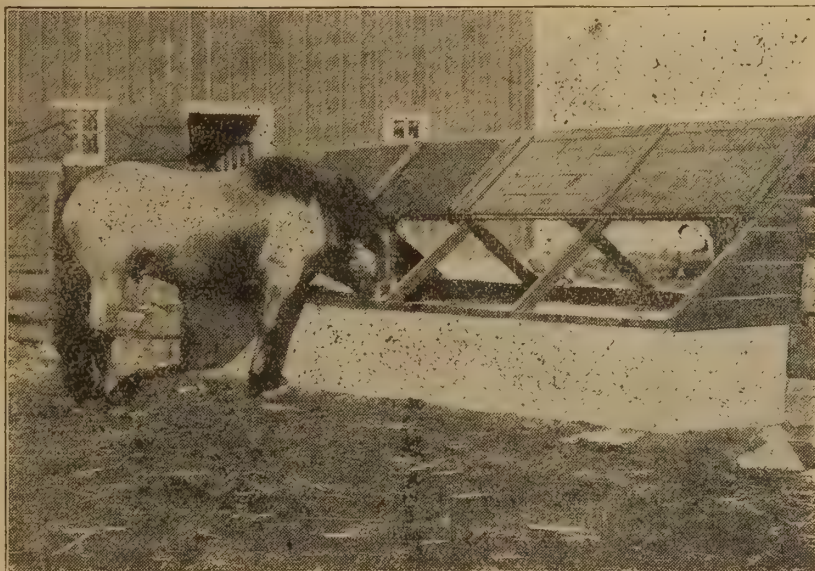
Early experiments showed that the methods of tile drainage adopted in humid countries were not applicable to arid regions, and therefore a series of experiments was begun for the purpose of developing the proper methods of draining these lands. This work has now proceeded beyond the experimental state, and we are living at a time when we are just beginning to recognize in these abandoned and waste lands now fit only for pasteurage, a valuable asset which in a number of instances has been estimated to be at least one-half of the area that could be brought under cultivation with the water available in the different sections of this state.

Proceeding then with the discussion proper, and taking up the first division "The contributing factors producing the needs of drainage," I desire to call to your attention that one which is first, as it begins with the canals where the water is first diverted from the mountain streams for irrigation, but while there are great losses of water from canals and laterals, the

total water lost in this division of irrigation practice is much less than in some of the other divisions and in all of the other divisions taken together.

Referring to the losses in canals and laterals, a recent bulletin published by the U. S. Department of Agriculture by Samuel Fortier, 126, makes the statement that of all the canals in the United States the average loss from seepage, evaporation, etc., aggregates 40 per cent of all the water taken in at the entrance.

The losses of water from evaporation are relatively small in canal sections as they depend primarily upon the area of the water surface



Sometimes it is desirable to place a cover on stock watering troughs to prevent refuse from blowing into and fouling the water. All concrete watering troughs or tanks which are used in the barnyard or pasture lot should have a concrete pavement laid around them to prevent animals from transforming the surrounding into a mudhole.

exposed which is a minimum in this instance, so that we can charge seepage and deep percolation up with practically the whole 40 per cent of the water which is lost between the canyon streams and the land.

The second contributing factor which goes to produce the great need for drainage, is deep percolation attendant upon irrigation which thus wastes from one to two times as much water as the crops require. This matter has been made the subject of extensive experiments, measurements and observations, and the proper quantities of water have been determined for the growth of all the crops that are practical in this section of the country.

In looking over the records of performance of the several canals throughout the State, we find that from two to three times as much water is used and applied to the lands in question, measured at the farm intakes, as is necessary for crop production.

Another factor contributing to the needs of drainage is the waste water which is allowed to run off from irrigated fields, flooding the roads and waste lands to such an extent that large portions of this water find their way into the soil bodies raising the ground water table and ultimately doing the damage which results from water-logging.

In my judgment, the amount of water lost and wasted, and doing damage to the lower lands, coming from the surplus waste running off irrigated fields, will range anywhere from 10 to 25 per cent of the amount of water required for successful growth of crops.

The 4th contributing factor to be taken up here is the naturally alkaline soils which require more water than they can successfully handle and which is necessary to be applied in copious quantities for the removal of the alkali present in such soils.

The first three factors mentioned

The first growth of alfalfa is now for enough along so as to show what condition your alfalfa field is in. Some stands have never been changed for years. No wonder they are eaten up by the weevil and hoppers. It is a shame to leave the alfalfa so long, it should be plowed up and rotated with other crops.

Some farmers have allowed their alfalfa to grow in one place so long that the stand is half gone. Cheat grass and dandelions have choked it out or taken the place where alfalfa should be growing. The result is, many are only getting a half crop of hay.

Why don't our farmers plow it up and grow other crops that will produce more tonnage. These old stands are only producing one or two tons of hay per acre. If they were plowed up this spring when the alfalfa is about a foot high and planted to corn this year, that same ground would produce several tons of feeds. I saw a patch of extra good corn last year, according to careful estimates of several people, produced 21 to 23 tons of ensilage per acre. Yet some of our farmers are satisfied with their old stand of alfalfa getting only one or two tons. The trouble is, we have not learned the value of crop rotations. Some have and are profiting by doing it.

I am going to offer this suggestion that you plow up your old alfalfa beds. Wait until the grass and other weeds have a good growth and while they are yet green and by this time there will be a good growth of alfalfa and then plow them all under and plant to corn.

You will get many tons more feed in this way of corn and corn fodder, and surely every one realizes the feed shortage and that we should produce every bit of feed possible. If you have a silo this is the way to get your corn. If you do not want to plant corn plow up the old alfalfa bed and get it ready for some other crop. Plant it to potatoes or beans. There will be time for them this year, but do not allow those old alfalfa beds to only produce one-half or one-fourth a crop when we need hay and feed so much for our livestock.

The suggestions and methods of plowing alfalfa under as given by Mr. Mark Austin in a recent issue of the Utah Farmer are so practical that I am going to take the liberty of asking you to reproduce a part of them.

"Allow your alfalfa to grow by giving it sufficient water to keep it in first class growing condition until time for planting late potatoes or corn. See that the land is nice and damp, and then plow under the green foliage, plowing about eight, nine or ten inches deep. Depth will depend upon the previous plowings. See that the plow cuts the right width of furrow so that all the soil is cut and thoroughly turned up side down. All the green alfalfa should be thoroughly covered and then follow with a land leveler or float so as to hold the moisture. If the work is properly done, the green alfalfa will decay and so will also the entire root system and the entire plant passes off into the soil

(Continued on page 10.)

(Continued on page 15.)

DAIRYING

HE HAD RECORDS
By Ben R. Eldredge.

For a long time the breeders of the dairy cattle and the dairymen in the State of Utah have had preached to them the gospel of "keeping records." In a few places the word has been received and the principle of keeping a tally on the cows has been put in practice. Last week there was shipped a lot of cows and heifers into one of the central counties of the state from a breeder in Salt Lake County. These cattle were not selected because they were cheap not because they were show cattle. They were good cattle. The mature cows had records and the heifers had dams who had records and sires who had tested daughters that were satisfactory producers. In other words, the breeder who shipped these cattle had kept a tally of the production of the individuals in his herd and knew of the individual merit of his cattle. He sold all of the cattle he had to spare but the buyers wanted more and they searched through several counties in vain for cattle who had records or were progeny of sire and dam of known value.

This tells two things distinctly—that there is a demand for cows and heifers which are either of known record or the progeny of cattle whose records are available, and it also tells us that those breeders who are keeping such records are selling every available female in their herds. Mr. Breeder, are you one who has records that you can show to prospective buyers?

A buyer inquired where he could find a carload of cows of a certain class. I directed him to a district where the class of cattle he was seeking predominated. He returned without buying. I asked him if he had not found what he wanted and he replied: "Well, they have cattle there and the prices are not out of

the way but they don't know anything about their cattle. I could not find a man who was keeping any records and could give me an accurate answer when I asked what any individual in his herd could produce." In another community there is a cow-testing association and some of the members keep a daily record in addition to the record kept by the man who does the work of testing.

I inquired about a certain herd in this association and was informed that it had been sold. I asked where it had gone, and was told that it was sold into Nevada, the owner having closed out his entire interest and moved to another locality. The prices, I learned, were very satisfactory but the herd had been sold on its record alone. The buyer, having some knowledge of cow-testing work, had taken the tester's record, which, together with some data from the private record of the owner, demonstrated to him that here were cattle of known value as producers and that money invested in them would bring a certain return and the risk, so far as there power to produce was concerned, was entirely eliminated. The prices received for the individuals of this herd were from 30% to 40% above prices offered for cattle without record and they were comparatively cheap at that.

I take it that while record-keeping is not general it is an encouraging sign of the times when a buyer selects a carload of cattle and upon being asked why he bought of a certain breeder the answer is given: "Well, he had records."

WELLSVILLE COW TESTING ASSOCIATION FOR APRIL 1917

By LeRoy W. Hilliam.

In view of the fact that there has been a considerable shortage of feed the Wellsville Cow Testing Association has made a very good record for the month of April. With a total of 368 cows on test, the Association average was 29.74 pounds of butter fat per cow for the 30 day period. 166 cows made over 30 pounds of fat and 72 cows are on the Honor Roll this month, each having produced over 40 pounds of butter fat. Of this number 23 produced over 50 pounds of fat, 5 over 60 pounds and one over 70 pounds of fat.

John Hendry's native cow "Sadie" is the highest producing butter fat cow for the month. She produced 72.1 pounds of fat. C. W. Parkinson's cow "Speck" a grade shorthorn was second with a production of 68.5 pounds of fat, while John Brechley's grade Holstein "Daisy" is third with 65.9 pounds of fat. This cow is also the highest milk producer for the month, she having produced 1782 pounds of milk. 76 cows produced over 1000 pounds of milk.

Twenty herds averaged over 30 pounds of butterfat per cow. The leading herd for the month is that of John Darley's, whose 21 Jerseys averaged 1098 pounds of milk and 49 pounds of butter fat per cow. Jos. R. Brown's mixed herd is second with an average of 42 pounds of fat per cow. LeRoy L. Green's mixed herd is third with an average of 38.3 pounds of butter fat.

During the month nine more boarders were sent over the butcher's block as beef.

From present indications a number of silos will be built in Wellsville and Hyrum during the summer. Several of the dairymen are also planning the construction of new barns, while others are planning improvements and changes on their present structures.

During the month twenty carloads of hay were brought into Wellsville alone. It can readily be seen that a co-operation of the dairymen in the buying of feed would greatly reduce the high cost of production. A number of inquires have been re-

PATRIOTISM DEMANDS

That All Butter-Fat Waste Be Stopped

President Wilson's powerful appeal for the conservation of the nation's resources is still ringing in our ears. "The supreme need," he says, "of our own nation, and of the nations with which we are co-operating, is an abundance of supplies, and especially of food stuffs;" and again, "Upon the farmers of this country, therefore, in large measure rests the fate of the war and the fate of the nation."

Wasteful methods must be abolished. Every device that makes for the saving of time and labor on the farm must be utilized. Every plan that makes for the conservation of our food products must have the farmer's hearty co-operation.

And nowhere is there greater opportunity than in the production of dairy products, particularly butter-fat.

"Fats, fats, fats, more fats," that is the demand of the warring nations in Europe. The men who toil and the men in the trenches must have fats. They are the fuel that the human machine must have.

And no fat is so palatable or so easily assimilated as butter.

When it was simply a question of the farmer's own loss of profit, the tremendous waste of butter-fat on American farms was bad enough, but under present conditions such waste is nothing short of criminal.

And it is wholly unnecessary.

It is conservatively estimated that about a million cow owners in the United States are still skimming milk by some wasteful "gravity" method.

At an average of four cows to the farm, and an average waste of thirty-five to fifty pounds of butter-fat per cow, all of which could be saved by the use of a De Laval Cream Separator, this alone represents an annual waste of at least 140,000,000 pounds of butter-fat.

Then there are, perhaps, a million inferior or half-worn-out separators in use whose owners could save fifteen to twenty pounds of butter-fat per cow per year by replacing such machines with New De Laval's; and this represents another waste of at least 60,000,000 pounds of butterfat annually.

Also there is the loss of time and labor that a De Laval would save and which could be better devoted to other productive work on the farm. This waste is hard to compute, but it is almost as important as the loss of butter-fat.

These are startling statements, but any dairy or creamery authority will agree that these estimates of waste are really very conservative.

Shall this tremendous waste continue? Will the loyal American farmer permit such waste when he appreciates the duty that is laid upon him to conserve the one article of food that above all others is necessary to the life and health and energy of the men who serve the nation in the field, the factory, the mine—and soon in the trenches?

We have always had an abiding faith in the American farmer, and we believe that if he is made to appreciate the full purport of the President's appeal to him, the appeal will not be in vain; and when he further appreciates what the De Laval can do to save the butter-fat which is now being wasted, and that his patriotic duty demands that such waste be stopped—NOW—our plants will not be big enough to take care of one-half the demand for De Laval Cream Separators.

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If you want money,
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SALT LAKE CITY

ceived during the month regarding the purchase of tested cows. As yet but few of these orders have been filled as the general purpose seems to be to keep the better cows and eliminate the poorer ones and by so doing increase the average production of our herds and improve the individual quality of the cows in this community.

IMPORTANT FACTORS IN DRY-FARMING

(Continued from page 1)

the man to make a farmer, and perhaps the one of the most importance is **Natural Adaption**. He should be "fitted" for his work mentally and physically, have a liking for the outdoor life and rugged enough to handle rough jobs; he should be strong in his practicality rather than a theorist and have natural ingenuity enough to meet stubborn conditions and provide a way out of difficulties. If there is any occupation or place where good, practical, common sense counts it is on the farm and with the farmer.

He should have a wholesome sympathy with nature and make a constant study of her laws. His every impulse should beat in unison with her laws. His every impulse should beat in unison with her demands and a genuine co-operation formed with her forces. It would be better if the man had the natural inclination to enter into a compact with nature bound by the ties of love for his work, and thus dignify his calling by giving it his heart and the best ability he has. Unless the man has a love for the soil and an admiration for nature with her wonderful productive powers, he has little claim on the resources of the soil. If he is naturally endowed with such love and admiration he is already on the royal road to success. A man thus possessed has a natural adaptation for farm work.

Energy is another important quality for the man who chooses to till the soil. Energy is the motive power in the man—the power that propels and makes things move. It is the one element in the world, more than all others that makes for success. No man has ever climbed to great heights or accomplished any noteworthy achievements without it. The successes and failures in the business of men are tracable more than any other one thing, to the amount of energy possessed. Buxton says, "The great difference between men—the great and the insignificant—is energy—invincible determinations—a purpose once fixed, and then death or victory. This quality will do anything that can be done in this world; and no talents, no circumstances, and no opportunities will make a two-legged creature a man without it." A strong purpose is the thing needed; for the privations, discouragements, hard knocks and disappointments in developing the raw lands require a stronger force than mere "wisnes." Dry-Farming is no lazy man's job at the best, much less combating with the stubborn brush lands.

Persistence must also possess the man, for victory comes to those only who persevere. A resolute determination on the very start and renewed about every hour of the day would seem to be fitting to the fellow who goes into the task reclaiming some of the waste places. He should not be deceived of the arduous burden he is courting; but "with a nerve that never relaxes, the eye that never blanches and the thought that is fixed, press on for victory, no matter what the obstacles." Permanent success is only won by holding on. Those who do not have the staying power, had better seek some other occupation.

Patience in such work must not be underestimated, for perplexing circumstances are sure to arise, full of trials and heart aches.

Then, too, the harvest does not come the first year, and it requires patience as well as endurance to plod along until the second and third year only to find that the harvest are about half the expected amount.

Unlike other systems of farming we must abide a longer time before experiencing the joy of reaping.

Hopefulness is a quality required when the goal of success is not in the immediate future. Disparagement, too often comes before the race is run, and as endurance is essential in the prosecution of any attenuous and prolonged undertaking, the element of hope should play a strong part in the makeup of the man. He should not—must not—be easily disappointed but be hopeful and optimistic of the future. Hope induces cheerfulness and acts as a tonic to the soul of man—whetting up his courage to grapple with the stubborn elements in making a conquest of the desert.

Enthusiasm gives life to energy, harnesses persistence and puts it to work, sustains patience and vitalizes hope. It puts heart into work and lessens the burden of labor. Life's streams run smoother, and the days are sweeter to the man who puts enthusiasm into his work. No man of today can succeed to any great extent, and meet the strenuous, and self-sacrificing conditions incident to developing virgin lands into paying farms, who is not blessed with a good share of this element.

Push is the word. Things get out of the way of the energetic man. People admire him because he is enthusiastic over his occupation. He knows "It is not birth, nor rank nor state, 'Tis git-up-and-git that makes men great." That's the feeling needed in the man who has the ambition to join hands with nature in replacing the sage brush with golden fields of grain.

Such then are the qualities then, men should possess when they undertake to combat the stubborn elements in subduing the virgin soils—"redeeming the waste places and making them to blossom as the rose."

The right type of men can do the work—do it well and be successful and have joy in their accomplish-

ments. Other types have tried it and too often have failed.

The person who has had his growth and experience in the open country succeed, where the city man, though more highly educated, fails. Not that the city man does not possess virtues and strong characteristics, but that his training, his environments, and his contact with the affairs of life, have not developed in him the peculiar qualities insufficient force and balance to "fit" him for the job.

If success comes, and it must come in the process of time, the work will be done by just such type of men as are described in this article. They must be sturdy, full of vigor, energetic, persistent, patient, hopeful, enthusiastic, possessed with a natural adaptation for the work, and willing to exercise an active intelligence.

(2) Equipment.

We very often see a settler attempting the "redemption of the desert" with very meagre—almost useless—equipment. In the development of a dry-farm there is a certain course to pursue and certain work to do which calls for certain equipment. It is folly to commence such a task without the necessary implements of modern type. Nothing is more discouraging than to attempt a long, hard piece of work with inadequate, poorly constructed, or wornout tools, or tools not suited to the work.

The operator would better delay his work until he could earn enough to buy the proper equipment and commence work right. If he is going to live upon the land, especially if a family, comfortable temporary quarters should be provided for the seasons of residence. These should be tempor-



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ary only and the cost should be limited. The main effort should be to get the lands producing before any costly buildings are erected.

Apart from the necessary buildings and fence, the following ought to be provided to meet economical ends, under ordinary conditions.

Approx. Cost.

4 or 5 Horses 1300 lbs. to 1400 lbs. (2 or 3 can be mares)	\$750.00
1 Farm Wagon 3 1/4	140.00
1 Set Farm Harnesses	65.00
3 Single harnesses for plow	60.00
1 Set Rail Road Rails for Grubbing	25.00
1 Gang Plow	85.00
2 Sections "Nephi" Harrow	45.00
1 Sixteen Drop Grain Drill	150.00
1-3 Interest in 12 ft. Header	90.00
1 Header Box	35.00

\$1445.00

Nothing short of a four-house equipment in economical for a dry-farm.

We have provided here only what is necessary, with no surplus or unnecessary article included. As the development advances it may be found profitable to add a brush rake and a cultivator.

If water is to be developed by well, cistern or otherwise, an amount in addition should be provided.

This equipment with a good man, working five months ought to clear, plow and seed 100 acres the first year and 80 to 100 acres the second year and 40 to 60 acres each year for the next two years besides taking care of amounts previously plowed.

It is presumed the farmer can co-operate with two of his neighbors in the purchase of the Header and Header Beds, and these need not be bought until the second year.

We do not advise mechanical power in lieu of horses unless the party feels certain of its efficiency and of its economical use.—Very seldom the

(Continued on page 12)



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former as well as their present address, otherwise the
address cannot be changed. This is a matter of im-
portance to you and to us.

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Association, Utah State Bee Keepers' Association
Bear River Valley Farmers' Protective and Commercial
Association, Agricultural College Extension Depart-
ment and Utah State Fair Association, Utah-Idaho
Millers' and Grain Dealers' Association, Utah Fruit
Growers Association.

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debts of honest bankrupts. Notice of complaint
must be sent us within thirty days from date of the
transaction, and the subscriber must have mentioned
Utah Farmer when writing the advertiser.

Advertising Rates—The advertising rates will be sent
upon application.

One hundred chickens on every farm will help
the H. C. L. and give the boys and girls some-
thing to do. Let them run the chickens, of course
you tell them how to do it.

One of the best ways to help the wheat shortage
is to use less of it by substituting other foods in
place of it. Right now is the time to start do-
ing it.

With all this war excitement, lets keep our
heads. We do not need to make a big noise in
order to serve our country. Just keep our heads
and do our part. There is a nation to feed and
the farmers must do it.

Utah does not produce one-half the amount of
poultry products that she should or could do.
What's the reason? Will some one tell us why?
At present prices it would seem as if one should
make money from eggs.

There is a great demand for tractors this year.
They should be kept busy all year plowing up
the thousands of acres that can be dry-farmed.
There is no reason why we can not increase our
grain supply next year very materially.

The "Scrub" animal of any kind has no place
on the farm. It must go. Time and feed are
worth too much to have them around. Pure-bred
animals of known value are the kind to keep and
be sure you have all you can care for.

There seems to be a very good assurance that
farm products will bring a good price this fall.
Why not make the most of this condition
and produce all the food stuff possible? It will
be profitable to you and a service to your country.
Do the best you can.

POTATOES AND ONIONS

To see a sign in front of a theatre, offering
admission to people if they would bring potatoes
and a box seat for an onion would remind
many of our early pioneers, of the time when
they took wheat or other farm crops to pay the
admission to a dance or theatre.

A new York theatre made this offer last week,
and it was quite a success. There is a time,
when some things are worth more than money,
at least it would seem so in this case.

DON'T FORGET SUGAR BEETS

With all the talk about food stuff and increased
production we should not forget to grow as many
sugar beets as possible. It is the farmers "cash
crop" and the cash comes at a time when taxes
and other payment must be met.

The sugar beets makes a good rotation in our
crops and at present prices, is as profitable as
any other crop, all things being considered. Sugar
is one of the most important food products and
the sugar beets should not be forgotten in making
up our increased acreage.

If you have the land in proper condition and
can add another acre of sugar beets to your present
contract do so.

"DO YOU KNOW BEANS?"

Some people seem to know something about
them, others are going to learn, because they are
planting, and will cultivate different sized plots
or tracts, and before the season is over will
"know beans."

The lateness of the season will not permit
planting some crops, but beans can be planted
even at this time with a reasonable assurance that
the season will mature them. Select good seed
and get a variety that will ripen in about ninety
days.

At the present prices there should be a good
profit in raising beans. Plant them between the
young trees and other small plots where it is not
practical to grow grain and other such crops.

Beans are one of the best foods known. They can
be stored very easily and shipped a long distance
at a profit. Plant a few beans for your own use
and some to help feed the armies of the world.

DO LITTLE EXPERIMENTING THIS YEAR

There are many reasons why we should follow
the rule of "safety first" this year in our farm-
ing. With all this talk of increased production,
many are apt to try new methods and plant crops
they do not know how to farm.

Follow closely the methods you know to be
alright. Enthusiasts with little or no practical
training, offering suggestions with the best of
motives, may not know your soil and other local
conditions. If you follow their advice the results
may be very unsatisfactory.

The best thing to do is choose the safety first
plan. Consult the county agricultural agent and
any successful farmer in your locality and do little
or no experimenting with new crops and methods
of farming this year. Increase your acreage
and with crops that you know how to care for.

DIM THE LIGHTS

The spring weather has brought out every
automobile in use last year and many new ones.
At the beginning of the season we urge the prac-
tice of diming your lights when passing any one,
not only other autos but teams and people walk-
ing.

If there is no law to compell auto drivers to
be more careful we suggest that the Secretary
of State have printed some "safty first" rules
and give one of these booklets to each one when
he secures a number for his machine.

Already one death has been caused by a boy
becoming confused with a glare of the bright
lights.

If auto drivers will not heed the warning of
safty first suggestions, then something more
drastic should be done.

USE MORE MACHINERY

If there is any one thing that is stopping the
farmer from increasing his production it is help.
This can partly be over come by using modern
machinery.

The farmer has a very good prospect for good
prices in return for what he produces, and he can
afford to buy any implement or machine that will
help him to increase his production.

One should not go beyond what he can pay for,

or what would be profitable to him. Some tools
and implements are so helpful, and such time and
labor savers, that they are profitable to buy at
this time. Any thing that will save time, help
you to accomplish more will be profitable, provid-
ed, of course, that you have enough work of the
kind that will make the investment bring good re-
turns.

KEEP UP THE LIVESTOCK

"Plan now to grow more hay, to feed more
livestock, to sell for more money next year."
This is the way one man looks at the livestock
situation.

More hogs can be produced if we now plan for
fall litters, giving the sows better care and feed-
ing. Our dairy cows should be increased by
saving the better calves and weeding out the poor
producers. Better feeding, using a balanced
ration, would increase the milk and butter
supply.

Animal diseases make a loss of more than 250
millions each year in the United States. More
than half of this could be over come if we were
more careful and control such diseases as hog
cholera, black leg. The government and state
officials will help if you will only give them a
chance.

We must not make the mistake they did over
in Europe by allowing our breeding animals to be
killed for food. We ought to profit by their
experience. Right now is the time to plan for
more and better feed, so that we can increase our
livestock.

DO WE REALIZE

It seems hard to make some people realize that
a state of war exists with Germany. They do
not seem to comprehend that we have our part
to do now in this great world war. Since our
distinguished visitors from Europe have been
here, they have been emphasizing the question
of feeding ourselves and helping to feed about
250 millions in Europe.

Increased production and conservation is the
only way it can be done. We read of some men
who are trying to curtail production for selfish
reason, they ought to be handled by the Govern-
ment, men who will try to manipulate prices and
create distrust should be severely dealt with.

Do we realize how earnest and urgent President
Wilson was in his address to the people of this
nation? Read again the appeal he made to this
country. Trying to feed this nation and help
feed the allies with a short crop, and hardly any
surplus, is a problem that every man, woman and
child must do their part to solve.

The time for planting is short. Do all you
can to increase the food supply by production and
conservation.

CROP CONDITIONS

After going over a carefully prepared report of
crop conditions of the United States, it might be
told in a few words, "Season late, on account of
wet cold weather, preventing an increase crop
production."

In very few states are the crops up to normal.
Many of them report only a 50 per cent wheat
crop. There seems to be a general desire to in-
crease the acreage of foodstuff and farmers are
plowing closer to the fence than ever before.

In the states of Washington and South Dakota
some bankers have the spirit of helping, and are
loaning money without interest until December
1, to help the farmers build silos and buy fencing.
Also loaning money to buy live-stock at a fair
rate of interest. These bankers are helping to
increase production and building up their com-
munities at the same time.

In some of the middle west states, they are
farming the railroad rightaway and public high
ways.

Read the government report of Utah as com-
pared with the rest of the United States, printed
in another part of this issue.

The cold, wet, late season is preventing any
great increase of acreage in almost every state.
As the season advances conditions may improve.

Growing Sugar Beets For Profit

By J. C. Wheelon.

Plowing

"The seed bed should be deep and mellow" the sugar beet is a deep rooting plant, in harvesting the crop we often get beets that are much longer than the depth of an eight inch plowing and then we find that the lower end is broken off and the tap-root is still in the ground. The alfalfa bed or root system is deep but not usually mellow, while in the grain ground the root system is mellow but not deep, and in the case of raw or virgin soil, it is rarely mellow and while it may be rich the available plant foods usually occupy only a shallow surface acre.

Most men who write or talk about plowing will tell us that we should have a deep seed bed which means deep plowing, yet they will tell us also that if we plow more than an inch or two below the previous plow sole, we will turn up soil that may be rich but having never been handled before it is not air slacked and can not be depended upon to germinate the seed.

To the beginner this seems a serious problem; his ground has never been plowed more than four or five inches, and to get an eight or ten inch seed bed means three or four years. Here, however, is where the beginner is going to take his first plunge in the art of good farming.

We will prepare the ground the season before we plant the beets, and the process will apply in the case of alfalfa or grain stubble or raw or virgin soil; at the time when the second crop of hay is cut, and the grain is cut and after a small volunteer crop has made a green start, we will disc or spring-tooth the stubble both ways, this also applies to the hay, the grain, and the virgin soils. This process not only mixes the vegetable mould with the top soil but mellows the surface to such a marked degree that it not only makes it easier to plow but it gives us a better joining of the furrow slice with the plow sole.

This ground should then be plowed five or six inches deep regardless of the depth of the previous plowings, and follow at once with a very light fine tooth harrowing, this fines up the lumps and fills the interstices between the furrow slices and seals up the soil with a fine mulch that brings the moisture up from below and the real work of nature's laboratory begins. Countless numbers of bacteria and soil organisms are permitted and enabled to break down and humify the vegetable matter into the various elements necessary to feed future crops.

This should be left for ten days or two weeks if the season will permit that much time to get the balance of the process completed before the ground freezes, then disc or spring-tooth both ways and plow ten inches deep, following with a fine harrow and then plow as soon as you like with a plowing about five inches deep and leave rough until spring.

By this process we have the deep seed bed, the deep soil has been brought to the surface for a short time to air slack and the third plowing has returned the former soil back to the surface after being much improved by its sojourn under ground.

The second or deep plowing as well as the third plowing will not have to be repeated for several years on this piece of ground as one plowing per year can be varied in depth from year to year and will suffice until it becomes necessary to go deeper, when it can be done an inch or two at a time. The third plowing prepares the soil in such a manner that very little work is necessary in the spring; a light harrowing, a float followed by a light harrow just before the drill, gives a seed bed that is about perfect.

The second and third plowing and the discing or spring tooting preceding them may be considered by some as extra work that will cost

maybe six dollars per acre if we had to have it done by outside help, but I believe the results will justify the expense. The discing or spring tooth harrowing performs at least two especially important functions:

First. It furnishes the surface to such a degree that when plowed under the joining of the furrow slice with the plow sole is perfect, we know that capillary moisture will not pass up from below to the surface soil if lumpy earth or coarse manure is deposited next to the plow sole no matter how fine the surface is mulched. We also know that plant roots cannot get food from hard clods nor open spaces.

Second. It does the mixing of the vegetable mould with the earth as no other process can do it. Large sections of vegetation are not available as plant food until reduced and mingled with the soil. We have been told that most plants, and especially legumes, possess the ability to fix nitrogen from the air to the soil. This is true only so far as to the roots that are dead and decayed and mixed with the soil. Hundreds of exhaustive tests have shown that the soil that lay between the plant crowns of alfalfa (the bare spaces) contains no more per cent of nitrogen than that of the virgin or sage brush soil across the fence. This applies equally to the fields of two or three years in alfalfa and those of twenty or thirty years old. The percentage of nitrogen in the roots either alive or dead is very high, but while alive the roots supply it to the growing plant only and has not power to impart it to the soil. When cut and plowed under and is no longer able to produce leaves and foliage, the roots die and still the humus and nitrogen is retained in the cross-section of the dead root until mixed with the soil. This mixing is our job and if done frequently while decomposition is in progress, the roots or vegetation disappears as such; the soil is changed in color, its texture is greatly improved and its productiveness is greatly increased.

In view of these facts, what can we think of the man who burns the straw and stubble and plows his alfalfa four inches deep, rakes up the roots, and crowns and very carefully removes them from the fields and burns them and still calls himself a farmer.

Two or three tons of sugar beets per acre for the two or more years each following this extra work as an added yield resulting therefrom is a very low estimate and would pay 100 per cent or more on the cost of the work. These are the profits on the business, and the only profits, and this is the only way the profits can be made.

IRRIGATORS' QUERIES ANSWERED

O. W. Isrealson, U. A. C.

Discussing again the irrigation law which you have suggested in the last two numbers of the Farmer, I would like to ask if it is not dangerous to give so much power to a few men, as would be given by the proposed legislation?

There are, undoubtedly, cases on record where the centralizing of power in a few men has been decidedly unfortunate. However, the irrigation legislation described does not give to a few men absolute power; since appeal to the court may always be made. It is believed that there is little or no danger in the connection, and moreover, that it is absolutely necessary to centralize power and authority in the hands of a few well trained men, in order to get efficient operation of problems or activities which are so complex and difficult to handle as those which involve irrigation institutions. It must be emphatically kept in mind that work of this kind cannot be handled by untrained men. It is absolutely necessary for men to have thorough training in agriculture, and also some training in engineering, as well as elementary training in the legal principles of irrigation, to properly handle problems of this kind. More-

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over, training alone is not sufficient. It is highly desirable to choose men who have had experience in these matters over a period of years. The United States, as a whole, is just beginning to

realize fully that complex problems of this nature must be handled by men who have spent years in preparation, and propose to spend their lives in the solution of these questions.

HOME

PRACTICAL ECONOMIES

LEFT-OVERS

It is said that a French household lives upon what we throw away. This is true whether the material is visible, as in the case of food scraps and partly used dishes, or invisible, such as minerals and other nutrients of which the food is composed. The scraps take new and delicious forms by means of the gift in the use of seasonings, for which the French woman is famous, while the nutrients are conserved by means of methods in preparation, such as steaming, use of the stock pot and deep fat frying kettle. The recipes that follow have been used by the writer with good results and are timely in these days of high prices.

Uses of Stale Bread.

Steamed Bread.
Toast.
Bread Crumb Griddle Cakes.
Fried Bread (Dip slices in 6 table-spoons milk and one egg).
Milk Toast.
Bread Crumb Omelet.
Bread Puddings.
Dressing for fish, fowl, etc.
Apple Pudding.
Fine crumbs for croquettes-cutlets-scalloped dishes.

Bread Crumb Omelet.

1 c. stale bread crumbs.
1 c. milk.
3 eggs.
2 tb. butter.
Soak the bread crumbs for half an hour in the milk. Add the yolks of the eggs, beaten till thick and lemon-colored. Pepper and salt to taste, then put in the egg whites whipped to a dry froth. Cook in the melted butter and serve like an omelet.

Spiced Pudding.

Soak one packed cup of the brown crusts of bread in one pint of scalded milk until soft. Then add one-half cup molasses scant measure, one-eighth T salt, and one-fourth of a

level T of mixed spice (cinnamon, cloves, allspice, and nutmeg) and from one-half to one cup of raisins. Stir occasionally at first and bake in a very moderate oven for nearly one hour. Serve with whipped or plain cream or with a vanilla sauce. This may also be made of left-over jams and jellies, omitting the molasses and spices.

Apple Pudding.

Fill a buttered pudding dish with alternate layers of bread-crumbs and apple sauce which has been sweetened and slightly spiced. A tb. butter melted and mixed with the top layer of crumbs will give a crisp crust. Cover with a plate and bake slowly for half an hour; remove the cover for the last five minutes and brown the top. Raw apples sliced or chopped may be used, but in that case the pudding must be baked for an hour, or until the apples are tender. Serve hot with cream.

Left over Meat or Fish may be used as follows:

Stews.
Hash.
Scalloped.
Loaf.
Cakes.
Pie.
Soup.
Creamed.
Salad.

Beef Loaf.

1½ lbs. cold cooked meat cut fine.
5 soda crackers rolled fine.
Add to meat and crumbs:
2 tb. butter.
2 beaten eggs.
1 t. salt.
½ t. pepper.
½ t. sage.
A little scraped onion.
Moisten to pack well with a little broth or milk.
Mix very thoroughly. Make into loaf, rub over with softened butter and bake slowly 1½ hours. Use hot or cold.

Scalloped Meat or Fish.

One measure of meat, poultry, or fish chopped or cut fine, one of sauce or gravy, one of stale bread or coarse cracker crumbs, or boiled rice or macaroni. Season either meat or sauce highly with salt, pepper, onion juice, celery salt, or whatever is liked and is convenient at the time.

In a pudding dish put a layer of crumbs, then meat, moisten with sauce, and proceed till the dish is full, having crumbs on top.

Minced Meat on Toast.

One pint of cold roast or stewed beef, chicken, lamb, or veal freed from bones, skin, and gristle, and cut fine. Moisten slightly with hot gravy, milk, or water, or tomato, season to taste with salt and pepper, and when hot spread it on toast. Add one tablespoon butter if only water is used for moisture.

Meat Cakes.

Mix one cup of chopped cooked meat, one cup of bread-crumbs, one-half teaspoon of mixed herbs, one-eighth teaspoon of salt and a speck of pepper, with one beaten egg and one or two spoonfuls of milk.

Shape in small cakes and brown in hot fat.

LEFT-OVER CEREALS.

Even a few spoonfuls of well-cooked cereals (put away while hot in well greased baking powder cans) can be utilized in gems or griddle cakes or can be fried in fat and eaten hot with maple syrup.

Fried Mush and Bacon.

Cook slices of bacon in pan. Lift them out and lay on a hot plate. Cut cold mush in neat slices, dip in flour, egg crumbs. Fry in hot fat until brown and crisp on both sides. Drain on soft paper and serve with the bacon. This makes a delicious breakfast dish.

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The DIXIE

Rice.

There are many uses of cold rice. A good idea while preparing hot rice for the table is to cook a double portion and preserve it for various uses. Cold rice can be used in hot breakfast breads, for croquettes, a thickening to soups and stews, curried, fixed with cheese, worked into left-over meat dishes, and cream rice pudding.

Cream Rice Pudding.

2 tb. cold boiled rice.
3 tb. sugar.
1 egg yolk.
3 tb. cornstarch.
2 c. milk.
½ t. vanilla.

Put the milk with the cold rice in a double boiler, add sugar and salt. When it boils, add the cornstarch wet in a few tb. of cold milk. Just before it is ready to take from the fire, add the egg and flavoring. Eat cold with whipped cream.

Rice Gems.

1 egg.
1 c. milk.
1 tb. melted butter.
1 c. cold rice.
1 c. flour.
2 t. baking powder.
½ t. salt.

Beat the eggs till light, add the milk and butter. Beat the rice with this until smooth, then sift in the salt, flour and baking powder. Bake twenty minutes in hot gem pans.

Vegetables.

Small quantities of left-over vegetables may be used in salads, soups, and scalloped dishes.

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Cash must accompany the order.

A. A. HINCKLEY
Hinckley Utah

Scalloped Cabbage.

Mix cooked cabbage with half as much white sauce, season, put in a dish, cover with buttered crumbs and bake until hot and brown. Cauliflower and onions may be used in the same way.

Stewed Celery.

Use the best stalks on the table as a relish. The poorer ones cut into inch pieces, put into boiling water, and cook until tender. Drain, reserving the water for soup, and serve the celery dressed with butter, salt, and pepper, or with a white sauce.

Parsnip Fritters.

Mash cooked parsnips, removing tough fibers. To each cup add one beaten egg and season with salt, pep-

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per, and sugar if desired. If too thin add a little flour. Fry in deep fat or on a griddle, or brush over with melted butter and bake.

SOUPS.

Stock From Left-Overs.

The raw or cooked bones and trimmings from roast and steaks, the water in which fresh meat, poultry, rice, or any young vegetables have been cooked, and add bits of parsley, celery, onion, and carrot may be combined to make a stock useful for sauces and hashes as well as for soups.

The cooking of such soup stock may be intermittent; today's remnants may be scalded and cooled, more added tomorrow, and the whole again scalded, and on the third day the cooking continued longer and the stock strained for use.

Sauces and gravies are really condensed soups, and a cupful left over may be thinned with milk or water in which meat or vegetables were boiled, even that from young turnip, cabbage, or onions may be used.

A chopped onion and grated carrot boiled in the water in which meat has been cooked, after the fat is removed, will provide an acceptable soup.

Seasoning materials like curry and celery salt, used judiciously will make savory soups from food material often wasted.

Cream Soups.

These are a combination of the white or cream sauce with vegetable pulp. (A good way to use small quantities of left-over vegetables).

Such soups are rather heavy for dinner, but are suitable for the main dish at luncheon.

The vegetables are cooked till soft, rubbed through a strainer, and, except potatoes, are used with part or all of the water in which they were cooked.

The proportion of thickening varies with the density of the pulp used, but even beans and potatoes need a little flour to hold liquid and pulp smoothly together.

To be at their best, cream soups should not be prepared long before serving.

More hot milk may always be added if the soup is too thick.

Beaten egg mixed in just before serving will remedy undue thinness.

Cream of Potato or Any Other Vegetable Except Tomato.

Mix one cup of mashed potato with one pint of hot milk; add one cup of white sauce, flavor with salt, pepper, celery salt, and onion juice. Half potato and half white turnip also makes a good soup.

Cream of Tomato Soup.

Stew together:—1 pint tomato, 1 slice onion, 1 bay leaf—10 minutes.

Heat 1 quart milk.

Melt 2 tb. butter.

Add 2 tb. flour.

Add to strained tomatoes:—½ t. soda. 1 t. sugar.

Season with salt, pepper, and celery salt.

REMODELING CLOTHING.

The points to consider in all remodeling and remaking are:— (1) Is the article worth remodeling. (It does not always pay to make over old clothes); (2) If so, how can it be done with the least expenditure of time and money.

If an article is not very much out of date it can often be rendered wearable by the addition of a new yoke, new sleeves, fresh collar and cuffs, or the lengthening of a skirt. Nothing in styles changes more rapidly than the sleeve and often altering sleeves or adding new ones is all that is necessary to bring a dress up to date.

Common alterations are:

(1) Changing style of sleeve. To make sleeves smaller use a smaller pattern and cut over. To make larger add an underarm or a piece under a tuck, or put a piece of trimming lengthwise over the seam. If you do the latter, bring the seam in upper part of sleeve near back of arm. At

the present time sleeves are often made of a different material than the rest of the dress and so new sleeves may easily be added.

Sleeves may be lengthened by the addition of a cuff, or the lower part of sleeve may be joined to the upper just below elbow with a tuck or band of trimming.

(2) Lengthening skirt. Put a false hem on, or if more length is desired baste a tuck in bottom of skirt and set lower part under, stitching tuck and piece to skirt at the same time. Very often a hem of different material may be added, serving as a trimming as well as lengthening the skirt. Garments of wash material may be lengthened by bands of insertion or braids.

(3) Narrowing a skirt. Decide how many inches are to be taken out and at what places it can best be done. Take from the back edge of gores running off to seam (if skirt is fitted at hips) six inches below hip line. Full skirts may be recut into narrow ones.

(4) Altering waists. A waist may be lengthened by adding a belt between waist and skirt. Wash waists which have become worn about collar or wrists and are not worth a new collar or cuffs can be utilized by cutting away worn parts and wearing with a Dutch collar in summer. Sleeves can be cut short if desired and finished with a suitable edge. When waists are worn underneath the arm and are worth it, rip the sleeves at armhole and underarm seams and replace with new pieces.

Garments Decidedly Out-of-Date.

If a garment is decidedly out of style the best thing to do is to rip it, mend if necessary, clean and press thoroughly and remake. When over-skirts are popular and dresses are made of a combination of materials as at present, old dresses can readily be made into up-to-date ones. Half worn clothing can very often be made into dresses, suits and coats for small boys and girls. Very often the materials in such garments will be much better grade than one can afford to buy for children. It is important that all materials be thoroughly cleaned before being remade. Discarded clothing of no other value can be washed, cut in strips and woven into rugs.

HIGH PRICES CREATE

INTEREST IN BEANS

With common field beans like the navy, bringing from \$6.50 to \$7.50 a bushel, interest in the bean has greatly increased. Even under average conditions, however, with such beans bringing \$2.80 a bushel, they can be produced at a fair profit.

Field beans can be produced to best advantage on loams or sandy loam. Clover sod has been found an excellent place on which to grow field beans. Since this is also desirable place for corn and potatoes, in a rotation, beans can be substituted for corn or potatoes without changing the plan of cropping.

Seed should be purchased from reliable growers or seed houses and only the best hand-picked choice navy beans should be used. From 18 to 20 pounds of such seed is enough for each acre.

Fall plowing is best for bean-growing, but if spring plowed ground is used it should be plowed early in April to allow the ground beneath to become firm before the beans are planted. Fall plowed ground should be disked once early in April. The soil should be mellow to a depth of three or four inches.

Planting should be delayed until danger of frost is past. It is advisable to wait until after the corn has been planted. From May 20 to June 10, according to latitude, is the time to plant it. With moisture conditions favorable the seed need not be planted deeper than 1½ or 2 inches. The highest yields have been obtained where the beans were drilled in rows 24 inches apart, one bean to each two, three, or four inches.

Enough cultivation to keep the crop free from weeds and the soil mellow

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Nichols & Shepard don't forget what a farm engine is for—just work. For steam they build from 13-40 to 25-85 h. p., in five sizes and fifteen variations burning wood, coal or straw. For Oil-Gas from 25-50 to 35-70 h. p., full power on kerosene. All in the

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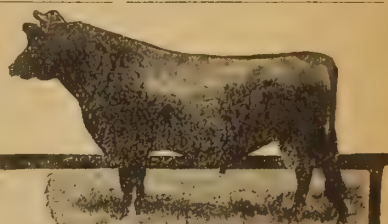
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should be given. Beans should not be cultivated when the leaves are wet with heavy dews or rain, if leaf diseases are to be avoided.

"DRAINAGE OF IRRIGATED FARM LANDS"

(Continued from page 3.)

method of lining canals and laterals with impervious materials for preventing and limiting the amount of water lost by deep percolation.

Up to the present time, very little has been done in this regard throughout the irrigated West except in places where the seepage was so noticeably great that the canals would not pay for operation on account of the great losses of water in particular sections. In a number of instances these sections have been lined with concrete which has been found to be the most serviceable and the most general economical form of canal lining used up to date.

In such latitudes as we have in Salt Lake City and practically throughout Utah for that matter, most of Nevada, portions of California, all of Washington, Oregon, Idaho and Montana, Wyoming and Colorado, severe freezing weather has made it necessary to use a considerable thickness of canal lining in order to insure the permanency of such improvement against the heaving action of frost. Recently, developments have been made along these lines which point to a reduction of 50 per cent in the cost of canal lining by improved construction, which will make it possible to line double the amount of lineal feet of canals with the same amount of money that has been used heretofore.

One of the largest jobs of canal lining which has been undertaken of recent years was the contract let by the Twin Falls Canal Company, Twin Falls, Idaho, during the last few weeks, to line a 6000 ft. section of their main canal which has a bottom width of 30 ft. and a top width of 70 ft., and a depth of 6 ft. This section of canal is being lined with a 4 inch thickness of concrete at a cost of \$65,000 or approximately \$11.00 per lineal foot. This canal company has 14 miles of such canal to line, and has begun a policy of lining at least a mile a year so that it will take fourteen years to line this section of canal. By that time, the canals that are now considered to be efficient, will have been considered inefficient with the growing value of irrigation water and the increasing value of the canal system so that other canal lining propositions and undertakings will be begun, no doubt.

The Weber and Davis County Canal near Ogden has been lined around a portion of the Sand Ridge where it is absolutely imperative, and is working very successfully. The Utah Lake Irrigation Company is preparing to begin work along these lines this season and will line as much of their canal around the Point of the mountain in the south end of Salt Lake as they can.

The canal referred to above at Twin Falls Idaho, is the south side Twin Falls main canal on the Snake River, and measurements of canal losses in this section were made in 1906 on a section of canal 7.79 miles in length showing a total of 194.7 cu. ft. per second or 11.5 per cent of the water carried.

Another measurement on the section of the same canal, 3.35 miles in length was measured in 1912, showing a loss of 167 cu. ft. per second or 5.2 per cent of the total water carried.

To emphasize the losses of water in canals and laterals, I desire to call your attention to a number of others. I now refer to the Salmon River project in Idaho, where a check basin lost 34.2 seconds. A small lateral known as the Murphy Land & Irrigation Company farm lateral, 5.25 miles in length, lost .562 per second foot or 38.60 per cent of the water carried. The Republican Canal on the Bitter Root River, over a section of 3.6 miles, lost 34.3 cubic feet per second or 28.5 per cent of the total water carried.

The Logan, Hyde Park & Smithfield Canal, Logan River, in a section 1.32 miles long, lost 21.3 cubic feet per second or 44.4 per cent of the total water carried.

The Bear River Canal line, Bear River Canyon 5½ miles shows a loss

of 70.7 second feet or 16.7 per cent of the water carried, as shown from measurements in 1902.

The Cottonwood Canal, St. George with a length of 14 miles, shows a loss of 3.17 second feet or 45.1 per cent of the total water carried.

The Prosser Falls Irrigation Company lateral, Yakima River, Washington, over a length of .38 miles, shows a loss of .32 per second foot or 64 per cent of the total water carried.

Losses of water in natural channels, flowing down the steep canyons of the Rocky Mountain sections to be diverted by means of lateral ditches, should also receive some attention in this connection, because there are losses in such canals often of the entire flow of such streams except during the Spring freshets.

These waters are among those most valuable, and they should be conserved either by the method of piping such flows or lining artificial channels for their preservation.

As an illustration of such losses, I desire to mention the Neff Canyon flow, a small canyon discharging into Salt Lake Valley about ten miles south of Salt Lake City. Here there are springs and sources of supply in the mountain from two to three miles above irrigatable lands discharging approximately two to three second feet throughout the entire year.

It is only during the early Spring season or when these flows are augmented by melting snows, and the discharges raised to 6 or 7 ft., that sufficient water reaches the lands through the natural channels and laterals to be of any practical use.

Personal measurements extending over a period of years, have shown that the losses in these instances, vary from 40 per cent during the freshet season to 100 per cent by the 1st of July. It will be encouraging to note that this water has been saved by the construction of a system of pipe lines, and that both the flood waters and they flow during the irrigation season, are being utilized to their fullest extent.

These are only a few instances showing the tremendous losses that occur in canals and laterals throughout the irrigated sections and covering all classes of formation and conditions found in practically all of our irrigation projects and needing attention, affording excellent opportunities for increasing the efficiency of the water now applied, or, rather wasted, which very conservatively will double the amount of land capable of being irrigated and being rendered productive by the application of the proper engineering methods of lining canals for the purpose of preventing these wastes.

The second preventative measure in irrigation, and the factor by which the greater per cent of loss occurs, is that of the use of better methods of applying water, reducing the losses from deep percolation to a minimum. This is a matter which will have to come through the education of the irrigators themselves—the men on the farm, the farmers who lay out their irrigation systems, who determine the length of the furrows or runs between checks, and who have the actual handling of the water after it is delivered to the farm.

When our farmers are sufficiently educated along these lines to appreciate the enormous waste that is attendant upon their usual methods of irrigation, they will more than double, probably triple, the number of acres that can be properly irrigated with the same amount of water that they are using, and at the same time remove one of the greatest factors producing these deficiencies. They can do this in two ways: first, by limiting the length of run of irrigation water, and second; by very careful manipulation of surface flooding. When water is allowed to run for a long time in one place, in order to reach the length of the furrows on the lower end, or in order to reach the lower end of the flooding division, the greater part of the water applied is lost for all practical purposes by deep percolation and seepage to arise on the lower land and contribute a large part of the sur-

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The picture tells you nothing except in a general way. What you want to know, as a prospective purchaser, is in a particular way. You want to know whether the horse is sound of limb and body; how old, sturdy and active it is, and something definite as to its spirit. The picture tells you none of these things. You can learn them only by inspecting the horse closely and seeing it in action.

It's just as unsatisfactory

to buy a farm implement from a picture as it is to buy a horse from a picture. You can't tell from an illustration whether or not the implement shown has material of inferior quality in the construction of some of its parts. You can't tell whether or not it has operating faults. You CAN tell if you closely inspect the implement itself and watch the operation of its parts.

We have a high-class line of inspection. Call and see them and satisfy yourself as to their quality and operating capabilities. That's the safe preparation for buying. We'll be mighty glad to see you.

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UTAH IDAHO WYOMING NEVADA

plus water which has injured so many thousands of acres of fertile fields in this state and surrounding states.

Just by way of illustration of the amount of water that is applied to lands under irrigation, I have taken a few figures from the Big Cottonwood Creek system in Utah for the several ditches, and will show the quantity of water used in depth in acre feet, and the acres irrigated per cubic foot per second. These figures include the losses from seepage and deep perco-

lation in canals and laterals, and as we have shown before that such losses average about 40 per cent, we may safely say that we can reduce this amount by 50 per cent.

In detail, we find that the Butler Ditch applied 6.24 acre feet of water on every acre of land or irrigated 53.72 acres per cubic ft. per second.

The Brown and Sanford Ditch applied 5.32 acre feet with a cubic foot per second duty of 63.01 acres.

The Upper Canal applied 6.3 acre

feet with a duty of 51.03 acres per cubic foot per second.

The Green Ditch applied 4.52 acre feet, giving a duty of water 71.97 acres per cubic foot per second.

The Lower Canal applied 2.83 acre feet with a duty of water 104.43 acres per second foot.

The Big Ditch applied 3.09 with a duty of water 95.64 acres per cubic foot per second.

The average depth applied on all these ditches is 4.8 acre feet. Assuming for purposes of illustration that the

loss in canals and laterals is 50 per cent, we have still to account for by the irrigation 2.4 acre feet per acre per annum, which is a very conservative estimate, and is exactly twice as much water as should be applied and as needs to be applied for the successful growth of crops in this section of the country where we have an annual precipitation of 16 inches per annum.

This shows that it is perfectly possible for the irrigators themselves, the farmers, to double the area of irrigated lands in the irrigated sections, by better methods of applying water to the farms, by producing double the crops at a greater per cent of profit than they are doing at the present time.

Another method of preventing the increase in the area requiring drainage, will be the prevention of waste water from running off the irrigated lands into ponds along the road and over unused land, thereby reducing the amount of water finding its way into the soil body. In addition to carrying off this water and wasting it, the farmers who allow this practice to prevail, are simply washing off the surface of their soils the most valuable portion of the soils a large part of the plant foods contained in the surface. They are truly wasters of their substance, and should be called to account for this practice. In this time for scarcity of food products and the great demand being made on the agricultural resources of our country, this waste should be prevented at once. They waste their substance, they prevent other lands from producing that which they are capable of producing, and in addition, they injure and render unproductive hundreds of thousands of acres by this reprehensible method of applying water with so much waste.

IRRIGATION AND DRAINAGE CONGRESS

Utah now has an Irrigation and Drainage Congress, with officers chosen for the present year.

The first meeting was held at Logan, at the annual round-up, and later on at Salt Lake City two meetings were held, when the following by-laws and constitution was agreed upon and officers selected for the coming year:

BY-LAWS.
UTAH IRRIGATION & DRAINAGE CONGRESS.

Article 1.—Membership.

Section 1. The membership of this organization shall be composed of persons, associations or corporations within the State of Utah, or elsewhere, who are interested in and will lend their assistance to the promotion of the purposes of the Congress.

Section 2. There shall be three classes of membership. Life membership shall be issued upon payment of a membership fee of \$15.00, which shall be invested by the Board of Directors, as a permanent endowment fund, the income from which shall cover all expenses in connection with such membership, including a copy of the Proceedings of the Congress. Annual memberships shall be issued on payment of One Dollar (\$1.00) per year, which price shall include a copy of the Proceedings of the Congress. Honorary memberships, for which no fee will be required, may be conferred in particular cases by a majority vote of the Board of Directors.

Article II.

Section 1. The elective officers of the organization shall consist of a president; a first, a second and a third vice-president; a secretary and a treasurer, which said officers shall, with a member elected from each judicial district, one from each congressional district, and two members from the state at large, constitute the Board of Directors.

The term of office shall be for one year.

Section 2. The Board of Directors shall have charge of all business of the Congress, fix the time and place for annual and other meetings, and prepare suitable programs.

Section 3. The Board of Directors shall fill any vacancies occurring in an elective office until the next annual meeting.

Section 4. The Board of Directors shall also act as a committee of finance, to invest the funds of the Congress and shall appoint a committee of three members to audit the accounts.

Section 5. The Board of Directors shall be a committee on legislation to carry out the directions of the Congress as expressed at its annual meeting in regard to legislation.

Section 6. The Board of Directors shall employ such assistance as will enable it to perform the duties imposed on it by the Congress.

Section 7. The President of the Congress shall be chairman of all meetings of the Congress and of the Board of

Directors, and shall call all meetings of the directors at his own instance, or as agreed upon among the Directors.

Section 8. Upon failure of the President to call a meeting, any three directors may call such meeting as the business of Congress shall warrant upon giving ten days written notice thereof to each director. Five directors shall constitute a quorum to transact the business of the Congress.

Article III—Committees.

Section 1. Permanent committees of the organization shall be as follows:

A committee of seven on nominations shall be elected each year by the membership of the Congress at the annual meeting thereof. The duties of this committee shall be to select and place in nomination not more than three candidates for each office to be filled.

Section 2. A committee on resolutions, consisting of seven members, shall be appointed by the president at the first session of each convention.

Section 3. A standing committee on membership, consisting of seven directors.

Section 4. A standing committee on Publicity, consisting of three members.

Section 5. And such special committees as may be designated by the Congress shall be appointed at the last session of each annual meeting by the newly elected president for the ensuing year.

Article IV—Amendments.

These By-Laws may be amended at any meeting of the Board by the majority vote of those present.

CONSTITUTION OF THE UTAH IRRIGATION AND DRAINAGE CONGRESS

Article I.

The name of the organization shall be the Utah Irrigation and Drainage Congress.

Article II.

The object and purpose of this organization shall be the dissemination of information pertaining to irrigation and drainage, especially in the State of Utah, and to encourage the development of legitimate irrigation and drainage enterprises; and to further the interest of the State of Utah in the conservation of its water and to advance the interest of the State and its inhabitants in perfecting and protecting all irrigation and drainage interests.

Article III.

The officers of the Congress shall consist of the following:

A president; first, second and third vice-president, a secretary and a treasurer, which together with one director from each of the seven judicial districts of the State; and one, from each congressional district, and two from the state at large, shall constitute the Board of Directors and shall be the Governing Board of the Congress, and shall hold office for one year and until their successors are elected.

The officers for the first year shall be. Mathonihah Thomas, Salt Lake City, Utah President; W. D. Beer, Salt Lake City, Utah, First Vice-President; John C. Wheelon, Garland, Utah, Second Vice-President; A. F. Cardon, Logan, Utah, Third Vice-President; O. W. Israelson, Logan, Utah, Secretary; E. P. Ellison, Layton, Utah, Treasurer.

Directors, Judicial Districts.

First District, Olaf Cronquist, Logan, Utah, Director; Second District, D. D. McKay, Ogden, Utah, Director; Third District, A. E. Doremus, Salt Lake City, Director; Fourth District, R. S. Collett, Roosevelt, Director; Fifth District, Jas. A. Melville, Delta, Director; Sixth District, R. D. Young, Richfield, Director; Seventh District, Carl R. Marcussen, Price, Director.

Directors Congressional Districts.

C. F. Brown, Salt Lake City, Director; Wilford Day, Parowan, Director.

State at Large.

F. B. Hammond, Moab, Director; Jos. R. Murdock, Heber, Director.

Article IV.

The president shall perform all duties incident to the office and appoint all committees, unless the congress shall expressly do otherwise. In the absence from the State, or from disability the vice-president in the order of their seniority shall act as president.

The Secretary shall perform the duties incident to his office. The Treasurer shall perform the duties incident to his office and shall be custodian of the funds.

This Constitution may be amended from time to time by a two-thirds (2-3) vote of the members present at any regular meeting, or at any special meeting called for that purpose.

Article V.

All persons, associations or corporations, private or municipal, engaged in irrigation or drainage, directly or indirectly, or who are interested in the furtherance of the purpose of this congress, shall be eligible to membership, under such rules and conditions as the directors may from time to time, impose through By-laws.

MAKING IT PLAIN

The government had installed a telegraph line from Prejedor to Bi-hatch (Bosnia).

"What is the meaning of this wire?" asked the astonished inhabitants of a village through which the line happened to pass.

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Refiners
Salt Lake City, Utah.



THE MOWER
BRANDED



Is but one tool of this quality line for lessening farm work.

STREVELL-PATERSON HDW. CO.
Salt Lake City, Utah.

S-P4

The villagers were incredulous, "That is impossible! How can a message run along the wire?"

The head-man thought a while; then he hit upon the proper explanation. "Imagine," he said, a dog that is terribly long, and whose tail is stretched, like the wire on these poles; imagine that his tail is so long that he reaches from here to Stamboul. Now, suppose we pinched his tail here. Wouldn't he howl in Stamboul?

The villagers understood.

HELPED BY THE SERMON

A colored preacher was vehemently denouncing the sins of his congregation. "Bredern an' sistern, Ah warns yo' 'gainst de heinous sin ob shootin' craps! Ah charges yo' 'gainst de black rascality ob liftin' pallets. But above else, bredern an' sistern, Ah demolishes yo' 'gainst de crime ob melon stealin'."

A brother in a back seat made an odd sound with his lips, rose and snapped his fingers. Then he sat down again with an alashed look.

"Whuffo, mah fren," said the parson sternly, "does yo' rar up an' snap yo' fingahs when Ah speaks ob melon stealin'?"

"Yo' jes remin's me, pahson," the man in the back seat answered meekly, "wha' Ah lef' mah knife."

LIVE STOCK

PRESERVE SOWS FOR BREEDING

Potential pork possibilities are great and there is a big demand for pigs. A sow is a good investment. This is true even in these strenuous times of high prices of food concentrates. The quotations on these feeds are controlled to a considerable extent by the price at which meat animals sell. Hence concentrates usually command a high figure when hogs on the hoof at large packing centers sell at more than 16 cents per pound. However, record prices for swine as well as feed concentrates have been a great incentive to farmers to "cash in" all the hogs available. That many sows have been included is evident from the fact that on April 1 the correspondents of the Bureau of Crop Estimates reported approximately three per cent fewer sows on farms in the United States than a year before. Further, this is the first year that the supply has not increased since 1913.

At this time the marketing of a sow that can be or has been bred is fairly comparable to "killing the goose that laid the golden egg." Although the fecundity of swine is well appreciated by farmers, at times sows are sacrificed when a little forethought would cause them to be retained. Breeding sows multiply five or six times as rapidly as other meat animals. They have an average litter of five or six pigs and may be bred twice a year, although three times in two years accords more with current farm practice. The litters increase in size, on the average, until sows are five or six years old. However, a large proportion of the cows are sold after producing one or two litters and before they have reached the period of greatest usefulness. Occasionally sows are unsuitable for breeding because of their clumsiness, "high" condition, inactivity or barrenness, and these, of course, go to market when of proper weight, but the total sows of this class is a mere bagatelle.

In these days when labor is high and also scarce on many farms, the hog may afford "a way out." Hogs utilize refuse and waste grains, damaged grains, and garbage; garnering grain behind cattle or shattered grain in harvest fields; and utilizing slaughterhouse by-products and dairy by-products. They are also largely self-feeders. The modern farm "cafeteria" gives a pig a chance to make a hog of himself more quickly than he can by the hand-fed route, and it has the added merit of being a sow when she is not developing a litter or nursing pigs, can in summer time be placed in a pasture and given very little grain. In winter, possibly the cheapest maintenance ration is a combination of grain and hay, such as corn, wheat, rye, or barley, and alfalfa, clover, cowpeas or soy bean hay. The grain should be limited to one or two pounds per hundred pounds live weight per day. Sows should be given all the hay they will clean up. Sows which show exceptionally run-down condition from suckling their pigs should be separated from the herd and fed grain until they regain breeding condition. Where pastures are very luxuriant, it is possible to carry breeding sows on pasture alone, but the most palatable hay will not keep sows in good breeding condition if fed alone.

Breeding sows are at a premium and the demand for young stock is unprecedented. The hog buyers state in their reports that they are compelled to take anything that looks like a hog. The fluctuation in the number of hogs in the United States is subject largely to the fluctuations in the financial condition of the country. The high prices paid for hogs are a big inducement to farmers to market their hogs, and as stated before, the high prices of corn caused them to cut loose during the latter part of the year. The high prices paid

for hogs and an increasing export trade are the two main actors which make the hog business especially attractive at the present time. Millions of farmers would purchase sows to farrow this coming spring if they could, but this is almost an impossibility. Those farmers who are fortunate enough to have retained their breeding sows will play an important role in placing spring pigs on the market. The spring gilts from these litters should not be sent to market for meat purposes, but should be retained or sold only for breeding purposes in order to augment the pig crop next year.

FEED THE LEGUMES.

Every progressive farmer now knows that leguminous crops are an effective way of maintaining soil fertility and for this reason the acreage in them is constantly increasing. If the whole crop is plowed under, however, it is evident that there can be no revenue from the land that year. It is much more profitable, therefore, to pasture the land and then to plow under what remains of the crop, together with the manure that is left on the ground.

Barnyard manure contains a large proportion of the fertilizing value of the substances fed the animals. In the effect upon fertility, therefore, it makes comparatively little difference whether the crop or the manure it produces is returned to the soil. What difference does exist is much more than offset by the profit that should accompany the proper management of live stock.

All legumes make good pasturage and their use for this purpose will minimize the need for more expensive feedstuffs. The extent to which this is done is one of the great factors that make for success in the live stock industry. The efficient use of all farm roughage, such as straw and stover, and of leguminous crops will provide the farmer with much valuable feed which may be said to cost him little or nothing for giving it to animals does not materially lessen its fertilizing value and under ordinary circumstances no direct cash returns are to be expected from it.

IMPORTANT FACTORS IN DRY-FARMING

(Continued from page 5)
Tractor proves satisfactory on new land with new inexperienced hands. We have one instance, however, where a couple of young farmers developed over 200 acres of brush lands with gas tractor and planted same to wheat at cost of \$5.65 per acre, including the seed at \$1.00 per bushel.

(3) Supplies.

Another need in developing a dry-farm, and which is usually overlooked is the feed for horses and the supplies for the family, sufficient to last until the first harvest, as this harvest does not come until about eighteen months from first operations, a considerable capital is needed to keep up the motive power both in the horses and in the man, as well as to provide the family.

The amount can only be very roughly estimated, depending upon the amount of grazing the horses can get and the number of persons to feed and clothe.

Then there is the seed to purchase, which would amount to near \$100.00 for first planting. Roughly guessing, it will require an additional \$700.00 to \$1000.00 to supply these requirements, and if this amount, in addition to the improvements and implements, is not on hand, it should be earned during the process of the work. There is at least six months the man and teams can employ off the farm, and if he is prudent he will utilize this time in providing means for these contingencies.

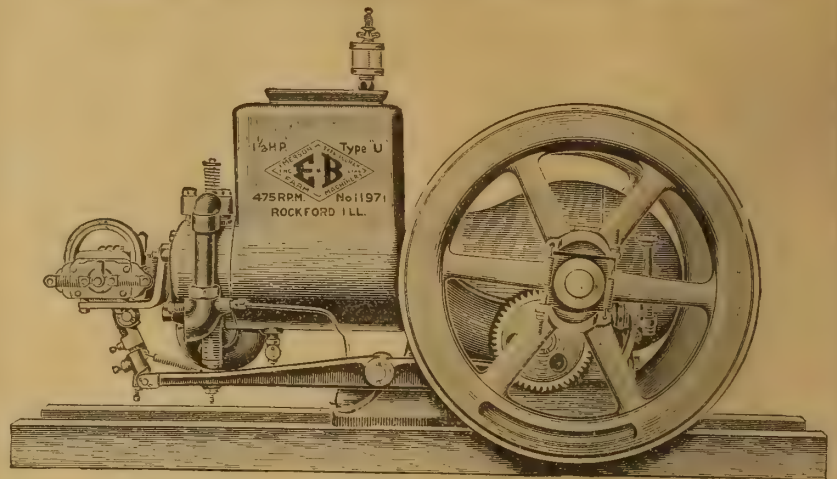
Conclusion.

Let us remember then, the three essential needs in developing a dry-farm:

First: The right qualities in the

The E. B. Gas Engine

MADE TO DO THE HARD WORK ON YOUR FARM



The E-B Gas Engine

THE E-B engine is cast in three sections. Should the cylinder freeze up and the jacket crack, you can replace the broken part instead of buying a new engine. The cylinder is water jacketed from end to end, providing against heating of any parts.

Vertical valves insure perfect seating, so all compression is retained and no power is lost. E-B engines develop

"More Power Per Gallon"

MILLER-CAHOON COMPANY

Murray, Utah

Idaho Falls, Idaho

The Martin
WAY
DITCHER AND GRADER

ONE OF A THOUSAND
"I never was a great friend of the shovel and since I have used the MARTIN, the shovel and I have entirely dissolved partnership." F. H. Lytle, Pioche, Nev.

DITCHES!
—Make the NEW and clean the OLD with the MARTIN Ditcher, Dyker and Grader. It makes or cleans irrigation or drain ditches up to 4 feet deep, any width. Builds dykes; grades roads.

The Martin Ditcher and Grader
is guaranteed to do more and better work than 50 men with shovels. Works in sand, clay, gumbo or rocks—wet or dry; on side hill or on level ground. Made in 2, 4 and 6-horse sizes.

All Steel—Reversible
Adjustable for wide or narrow cut. No wheels, levers or breakable parts. Cost low. Up-keep nothing.

OWENSBORO DITCHER & GRADER CO., Inc.
803 Evans Block
Denver - Colorado

10 DAYS
trial to everybody. Write today for catalog, with full particulars and introductory offer on new 1917 Models.

Utah Implement-Vehicle Co.

Salt Lake Agents and Distributors.

Write us.

man which is the most important of all.

Second: Adequate equipment with horses strong and in good flesh and implements of modern patterns kept in good working order, which is always necessary to a successful and economical operation.

Third: A fund for the purchase of seed, horse feed and family supplies, or a way of procuring same by means of work.

AN APPEAL FROM THE CONVENTION OF FARM PAPERS

"With the entrance of the United States into the world war farmers of sistent and inexorable obligation. It is a war of food more than of munitions. Nature has turned a forbidding face on the early harvests of the world. A shortage of more than 50,000,000 bushels of winter wheat, at home and a deficiency in all crops abroad sound a trumpet call to farmers to bend every effort to the limit of human intelligence, energy and ingenuity to wring from the earth its

maximum yield in all the coming harvests.

"Patriotism and profit should stimulate them. The life of the nation hangs in the balance. The rewards for intelligent farm toil were never so alluring and certain. Every man in his own field must be the judge of methods.

"This appeal seeks to arouse producers to the gravity of the situation, and to enlist in the army most necessary to the nation's defense—the army of farm men, women and children whose devoted and intelligent efforts will sustain our fighting forces and bring succor to starving men, women and children and insure inevitably the peace of the world."

A REFORMER

Small Rachel had been in the country for the first time and for only a few days. In the yard she saw one evening a hen gathering her chickens under her wings for the night. Flourishing her apron the girl ran at the hen, exclaiming:

"Shoo, shoo! you naughty thing!—you mustn't sit down on those pretty little birds."

How The Farmer Can Help

In Production and Conservation

By planting every available foot of ground that will produce food for man or live-stock.

By building silos, growing silage crops and producing more and cheaper feeds.

By exterminating and controlling weeds, pests, insects and rodents.

By proper care and selection of good seeds, treating same before planting.

By using modern machinery that will help the labor situation.

By planting in young orchards beans, sugar beets, tomatoes, carrots, etc. In the older orchard plant oats, peas, barley or pasture crops.

By increasing our live-stock, saving the females for breeding.

By selecting only the profitable dairy cows. Use the scales and Babcock tester.



More sugar beets will be grown this year than ever before.

By keeping a few sheep on every farm to eat the weeds and cheap feed otherwise wasted.

By increasing our poultry, set more hens, swat the rooster.

By raising the heifer calves, do not sell them for veal.

By giving more attention to animal diseases, such as hog cholera, etc.

By doing no experimenting. Raise the crops you know how, produce more and of better quality.

Demonstrate Thrift In Your Home

By practicing economy in food, clothing and eliminating all luxuries.

By not over eating and using only the amount necessary for healthy growth and repair of body.

By preparing only the amount that can be properly used at each meal.

By making use of all left-overs.
By cooking properly, using staple foods, learning how to serve them in a variety of ways.

By learning the value of new and nourishing foods;

such as rice when potatoes are scarce and high, corn for breadstuff when wheat is short.

By remodeling your clothing to secure the best service for money expended.

By better care and repair of clothing, footwear, etc. "A stitch in time saves nine."

By renovating and remodeling of millinery. Using old material with new.

By canning and drying foods of all kind including fruits.

MAKE SAVING, RATHER THAN SPENDING, YOUR SOCIAL STANDARD.



One hundred or more chickens on every farm. How many are you raising?

How We Can Help

We want to do our share or "bit." The farmer has the greater work to do this year, our plan is to help him every way possible.

As our manager is taking an active part in the greater production and conservation movement in the state we expect to keep our many thousands of readers posted in all that is going on.

We will help by giving each week helpful ideas and suggestions from practical farmers and experts as to the best way of increasing and conserving all of our farm products.

Such subjects as, better cultivation, irrigation, how to fight farm pests better thinning and cultivation of sugar beets, silos and how to make them profitable, more and better live-stock, care and treatment of sick animals, better care in storage and harvesting of our crops, how to use modern machinery with a profit are some of the problems that will have our attention.

The home department will be emphasized, telling how we can conserve our food and clothing.

If your neighbor does not take the Utah Farmer tell him about it and how he can secure it. We promise to give you the biggest dollar's worth this year you ever had.



The quickest way to increase our meat supply is to raise more hogs. Save the brood sows.

Beans

J. C. Hogenson, Agricultural College.
In this time of high cost of living, the patriotic call of our country demands that every citizen shall do his full share to increase the food supply. Crops that grow and mature quickly should be produced. There is probably no crop that answers this requirement better than beans. They are easily grown, require only a short season to mature, and produce abundantly and cheaply, a rich, palatable, concentrated, nutritious food. They are also easily stored for future use.

Beans will do well in most any kind of rich soil, which should be well prepared so that it will not bake. It is a good practice to harrow the land just before planting to destroy the small weeds and make a mulch to hold the moisture.

Beans should be planted at such a time that by the time they come up danger from frost is over. It takes about eighty days for them to mature. They are usually planted in rows from 24 to 36 inches apart, at a depth of one to one and one-half inches. They must be planted in moist soil to get the best germination.

From the very nature of the bean it is not advisable to irrigate too early, particularly is this true on heavy soils, $\frac{1}{2}$ a crust which the young bean cannot break is likely to form. It also compacts the soil around the bean too much and so shuts out the air needed by the roots. This practice usually results in a poor stand, expensive cultivation, and a light crop. Irrigate once when the bean plants are half grown, and again when they are in full bloom. It does not take much water to grow beans. If the water is muddy do not let it come in contact with the leaves, as this has a tendency to weaken the plant.

Beans respond readily to cultivation. This should be done after each irrigation or heavy rain, and when weeds are troublesome. Shallow cultivation seems best because many of the bean roots spread out only two or three inches under the surface of the ground. The main thing is to keep the weeds down and the surface of the ground loose. Do not cultivate the beans while the leaves are wet. It injures the plants and helps to spread disease.

One of the best varieties to grow, and allow to ripen for dry beans, is the Little Wonder Navy. This variety has produced as high as 36 bushels to the acre. For green beans for canning purposes, the Stringless Green Pod, the Golden Wax, or the Kidney Wax are very good.

Harvesting.

Many of the small bean growers are still pulling their beans by hand. It is estimated that a man can pull about an acre a day. Where beans are grown in small patches for home use only, harvesting by hand is probably the cheaper method. But where they are grown in large fields for the market a bean cutter drawn by horses is far better and cheaper than pulling the beans by hand.

When cut by machinery, the beans are left in wind rows or small piles to cure. The cutting has to be done before all the pods are fully ripe, to prevent the first pods from shattering. If pulled by hand the beans can be left till practically all the pods are ripe. In the early morning is the best

To Buy

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

FREE FARM LANDS

The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our Committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah.

160 acres of which 100 acres is under irrigation and remainder also in crop; 6 miles from county seat. Property includes water right for entire tract. Price \$5,000.

FEDERAL LAND COMPANY
Ogden Utah

FOR SALE

In Boxelder County, 50 miles from Brigham City, 960 acres of land, 800 under cultivation, 400 in fall wheat, about 40 alfalfa, 12 head horses, harnesses, machinery, buildings, well and equipment. Price and terms reasonable. For particulars write

MILLER BROS. FARM CO.
394 S. M., Logan, Utah.

time to run the cutter to prevent shattering. The field must be free from weeds for the cutter to work successfully.

After the beans have been cured sufficiently they are hauled to the stack. Here they remain till threshed. To prevent the rains from spoiling the stack, usually it is topped off with straw or covered with a piece of canvas.

Harvesting should be done before the first killing frost; then the bean straw will make good feed for the cattle.

Threshing

Most of the beans raised are still threshed by hand with a flail the chaff is then separated from the beans by the fanning mill.

Some bean hullers are now in use and, as the crop becomes more and more a commercial one, more machinery will be employed to clean the beans for market. A common grain separator with most of the spikes removed from the concaves, and the racks fitted with bean sieves, will do the work fairly well. The speed of the cylinder has to be lowered, to prevent the breaking of the bean kernels. If the beans are broken the machine cleaned ones are in better condition for the market than those failed out on the ground.

For the boys of the State who desire to grow beans as a project for their club work, an eighth of an acre will be the unit.

A record must be kept of the preparation of the soil for planting, cultivation, irrigation, harvesting, yield, cost of production and profits.

HEARD IN BOSTON

At dinner one evening recently a little girl surprised her mother by saying, "I'm not stuck on that bread."

"Margie," said her mother reprovingly, "you want to cut that slang out."

"That's a peach of a way of correcting the child," remarked the father.

"I know," replied the mother, "but I just wanted to put her wise."

Give cauliflower, cabbage, and celery plants plenty of air.

FARMS

To Sell

RELIABLE FARM BARGAINS.

\$450 per acre will buy one acre of first-class garden land. On the 5-cent car line, immediately adjoining the city on the south. This land can be had for a small payment down and a long time on the balance. If you are living in the city and want to get out in a suburban home, this will appeal to you.

40, 80, or 160 acres in southern Idaho. The soil in this tract is first-class and there are 4 acre-feet of water per acre, the maintenance on the water being very low. It is located on the Oregon Short Line railroad and the state highway passes through the tract. The price of this land ranges from \$60 to \$100 per acre and can be sold for 10 per cent of purchase price and ten years on the balance at 6 per cent interest on deferred payments. If you are interested in purchasing a farm, investigate this proposition. We will gladly mail you a folder giving full details about this property upon request.

700 acres of land in Cache valley which we consider to be some of the best soil in that district. We have purchased this under such conditions that we can resell at a very low price and on very easy payments, 10 per cent at time of purchase and ten years on the balance at 7 per cent interest. If you are looking for a farm, we would advise you to investigate this property before purchasing elsewhere.

We have recently come into possession of several of the choicest farms in the Bear River valley. We are now offering these farms at a price of from \$135 to \$200 per acre, depending upon the location and the improvements. This land is all under a high state of cultivation and is all under irrigation from the Bear River Valley canal. It can be had for a 10 per cent down payment and ten years on the balance at 7 per cent interest.

2½ acres at Bountiful with 3-room house. Fine truck garden soil. Large strawberry patch. Flowing well. All fenced. Chicken coops, sheds, cemented cellar, etc. Total price only \$2190. Good terms.

720-acre ranch in good district of Nevada. 300 acres under cultivation, all irrigated. Fine water from mountain streams, 8-room house, stable, sheds, blacksmith shop etc. 45 head cows, 20 head horses, all necessary machinery and implements. Located four miles from railroad station. Forest reserve for pasturing cattle adjoins ranch. Good family orchard. Two miles to school. Price complete, \$30,000. Part cash, or will trade for Utah property. Good terms.

SPECIAL NOTICE: If you don't see what you want in this list, come in or write and tell us what you are looking for. We can get it for you and save you money. We trade farms for city homes.

KIMBALL & RICHARDS,
"Land Merchants,"
56-58 Main Street,
Salt Lake City, Utah.

Phone—Wasatch 963
FARM AND RANCH DEPARTMENT.

Farm Loans

CURRENT RATES
FAVORABLE TERMS
LIBERAL AMOUNTS
ALWAYS IN FUNDS

MILLER & VIELE
803-807 Kearns Building
SALT LAKE CITY

\$3,750.00 takes a 50 acre farm at Elberta, Utah. Fine Soil, very suitable for growing Alfalfa, Fruit, Beets, Grain, Garden Truck or any farm products. Good water right at a very reasonable rate. Adjoining to good schools and is located on railroad. Suitable terms can be arranged. This is a real buy for the man that wants a small farm at a good price.

W. C. ALBERTSON
604 Dooly Bldg.
Salt Lake City, Utah.

IDEAL COUNTRY HOME WOODS CROSS

2¼ Acres, irrigated by flowing well. Family orchard ¾ acre raspberries, ¼ acre asparagus. Four-room brick house with bath. Wash house. Good outside cellar. Hedge, cement walks and lawn. Price \$4,400.00 with \$2,000.00 down; or will take small \$2,000.00 home in Salt Lake, east side, and \$500.00 cash as part payment.

MUST ACT QUICK

THIS FARM PRODUCED \$2,250.00 IN 1916 50 Acres with good primary water right, 35 acres in Alfalfa and 15 acres wheat. All fenced. If you have \$2,000.00 cash you can get this farm. Total price \$4,150.00. It will make you a living and pay for itself from the jump.

EAST BOUNTIFUL

4½ acres with family orchard and garden all in good shape. Five room brick house and car line. This is a first class country home. It will pay you to investigate. Price \$5,000.00, one half down.

200 ACRES OF GROWING CROPS

280 acres farm with 60 acres alfalfa, 80 acres wheat and 60 acres of oats. Small house, 6 horses and 6 cows. Excellent water right. Located in vicinity of sugar factory. Values rising rapidly. Price \$85 per acre. 5,000 down.

A SACRIFICE

280 acres level sage brush land, with good water filing. If developed this year can be made worth \$75.00 per acre when cultivated. Owned by professional man who is unable to attend to it. 4½ miles from town of 2500 people. Price \$17.50 per acre.

ASHTON JENKINS COMPANY
47 Main Street,
Salt Lake City.

Insure Your Live Stock

against death from any cause

THE HARTFORD WAY

low rates no assessments

HEBER J. GRANT & CO.

22 Main Street Salt Lake City, Utah

SEEDS

Purity Brand

BEST BY TEST

Send Today For Our Big
FREE Catalog.

Vogeler Seed Co.

Salt Lake City, Utah.

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

BEST 4 EGGS 4 BEAUTY
R. C. Rhode Island Reds, White Wyandottes, S. C. Black Minorcas and White Leghorns.
Bred for Eggs and standard requirements. Better start right. Eggs guaranteed to hatch or replaced free of charge. Write for descriptive folder and prices.

E. C. BLANPIED

Milford, Utah

BABY CHICKS
CAN FURNISH EACH AND EVERY week throughout April, May and June 1,000 White Leghorns, 200 Buff Leghorns, 1,000 Brown Leghorns, 1,000 R. I. Reds, 500 Barred Plymouth Rocks, 200 White Plymouth Rocks, 100 Buff Plymouth Rocks, 300 White Wyandottes, 10 Buff Orpingtons, limited number of artridge Plymouth Rocks and White Orpingtons.

RAMSHAW, THE CHICKEN KING
y. 3048. 2415, 5th East
SALT LAKE CITY, UTAH

BABY CHICKS
All kinds, good stuff. Eggs for setting from Prize Winning R. I. Reds, \$1.50 to \$4.00. All kinds chicks handled. Agent for De Laval Separators. OGDEN FEED CO.
J. H. Shafer, Prop.

ogden Utah

FOR SALE
C. Brown Leghorn eggs for hatching on bred to lay strain. Free range cock. Prices: 75c for 15; \$3.75 for 100 delivered. Fertility guaranteed.—D. Stratton R. D. 1, Box 207, Provo, Utah.

Hatching Eggs 20% Off.
few White Leghorn Breeders at half January prices.

BATES & SONS
GUHAMA FARM
Provo, R. F. D. No. 1, Utah.

Baby Chicks

We offer baby chicks from the very best utility stock. Farm raised stock that you can depend on. White Leghorns, 25 for \$1.00, 50 for \$5.25 and 100 for \$10.00. Barred Plymouth Rocks, per 100—\$15.00; per 50—\$7.75. Rhode Island Reds, per 100—\$5.00; per 50—\$7.75. White Plymouth Rocks, per 100—\$15.00; per 50—\$7.50.

OGELER SEED COMPANY
Salt Lake City, Utah.

PERFECT
AGS
Samples Free
ATTACHED INSTANTANEOUSLY
Name and Address. Numbered if Desired.
G BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

Stop Raising Worms

When it is so Easy to Rid your ORCHARD and Garden of all such Pests.

CORONA DRY ARSENATE OF LEAD
solves your insect Problems. Write today for Free Booklet "How to Control Orchard and Garden Pests."

PORTER-WALTON CO.

Seed and Nursery Specialists
SALT LAKE

very farm home should have a strawberry bed, seventy-five or more raspberry bushes and a few black, white, and red currant bushes. Black currants are thrifty and

FOR SALE
Single Comb White Leghorn Hatching Eggs from bred to lay stock. Our thirteenth year Prices right.

MODEL POULTRY FARM
Corning California

YOUR OPPORTUNITY
200-290 Egg. Early Maturing, Winter Laying Leghorns. Anconas, Reds; W. Barred Rocks; W. Buff Wyandottes; Buff Orpingtons. \$3-\$10 yearly profit per hen. During May and June: Eggs half, chicks fourth off. Few pens all breeds, at bargain to make room. Guarantee you profit with feed high.

J. BEESON
Pasadena California

FOR SALE
Two imported registered Percheron Mares, also several Purebred Jersey Bull Calves from neavy producing imported Island Stock. Apply

STATE MENTAL HOSPITAL
Provo Utah

DUROC-JERSEY BOAR PIGS
that are registered and from the world's greatest families being grandsons of the \$5,000 DEFENDER and the \$2,000 ILLUSTRATOR. Spring pigs \$15.00 each and boars of serviceable age \$35.00 each, that are CHOICE.
Satisfaction or Your Money Back.

EDWIN BRICKERT
Beaver Utah

FOR SALE
Two young pure-bred, registered Percheron Stallions, between 2 and 3 years old. Well bred and good individuals. Both took ribbons at the State Fair last fall. For sale cheap. Also a span of young Percheron Mares. Address

PARLEY P. PARRISH
R. D. Box 53, Farmington, Utah.

SAVE MONEY ON YOUR LUMBER BILL. WRITE US. PACIFIC COAST SAWMILL COMPANY, Portland, Oregon.

RAG APPLE KORNDYKE 13TH

BULLS FOR SAL
From A R O dams which we are offering at reasonable prices, write us.

NELSON BROS.
Richmond Utah

SHORTHORN BULLS
Two choice Shorthorn Bulls for sale. Year old and nine months. If you want a good one here is your chance, otherwise don't answer.

DR. OTTO NIELSON
Ephraim Utah

FOR SALE
First class Registered Holsteins Bulls, ranging in age from two months to one year. Highest class breeding. Farmers' Prices.
STATE INDUSTRIAL SCHOOL
Box 41, Ogden, Utah.

WORLD FACING BREAD FAMINE

(Continued from page 3)

The winter wheat crop, planted last autumn on one of the largest acreages ever sown to that grain, but which met disaster in several important producing states from severe winter conditions, now promises a harvest of 366,616,000 bushels this year. That quantity was forecast today by the department of agriculture, which based its estimate on the condition of the crop May 1 as reported by the thousands of agents throughout the grain belt. A month ago a crop of 430,000,000 bushels was forecast. Production last year was 481,744,000 bushels, and in 1915 it was 673,947,000 bushels.

On May 1 the area of winter wheat to be harvested was about 27,653,000 acres, compared with 40,090,000 acres sown last autumn and 34,829,000 acres harvested last year.

The condition of the crop on May 1 was 73.2 per cent of a normal, compared with 63.4 on April 1, 82.4 on May 1 last year and 86.6, the average of the last ten years on May 1.

Production of 60,735,000 bushels of rye is forecast from the May 1 condition, compared with a forecast of 60,000,000 bushels based on the April 1 condition, 47,383,000 bushels produced last year, and 54,050,000 bushels in 1915.

Rye condition on May 1 was 88.8 per cent of a normal, compared with 86.0 on April 1, 88.7 on May 1 of last year, and 90.2, the ten-year average on May 1.

The condition of winter wheat on May 1 this year, 73.2, was the lowest that it has been on that date since 1888. The abandonment of acreage planted is the heaviest ever recorded, nearly 31 per cent of the acreage planted. The forecast of production, based upon the condition and the acreage remaining for harvest, 366,000,000 bushels, is the smallest production of winter wheat since 1904. It compares with a production of 482,000,000 last year; 674,000,000 in 1915 and 495,000,000 the average of the preceding five years.

WHAT IS HUMUS

The term "Humus" is frequently used in discussions of soil problems.

Humus is the substance formed in the soil by decaying vegetable matter, such as leaves, stubble, roots, manure, crop plowed under and so on. Humus not only comprises elements of plant food itself, but it has the power of holding the necessary nitrates of fertile soil to prevent their escaping through washing or other means. It also has the effect of a sponge in absorbing and holding moisture in position and form available for the use of growing plants and aids in keeping the soil porous. Humus is indispensable to plant growth. Poor crops are in many cases due to its lack.

"We've come," said the chairman of a political committee in a northern Nebraska town, "to ask you to take this nomination. The city needs a man like you—strong, brave, self-reliant, owning no master, fearing no man."

The great man was visibly touched. "I'll not deny," he said, "that your kind words have shaken my resolution. I trust that, if elected, I may justify your confidence and prove that I am, indeed, strong, brave, self-reliant; that I own no master and fear no man. Suppose you wait a minute till I see if my wife will let me accept."

The knowledge of having done your duty is a larger personal asset than dollars.

Duroc Jersey Boars

Boars chuck full of Grand Champion Breeding. Bred the same way as our Utah State Fair Winners. We have a great lot of top spring Boars and are offering them at bargain prices. Every Boar guaranteed to please or money refunded. Write us today.

RICHARDS LIVE STOCK CO.
Virginia Idaho
The West's Best Durocs.

GROWING OF BEETS IS BENEFIT TO YOUR FARM

Besides providing an absolutely cash crop, a certain market, the growing of sugar beets, the Utah and Idaho, also provides one of the best means of fertilization through crop rotation. Agricultural experts agree that root crops are essential in good farming—sugar beets provide the safest, surest, cash producing crops of its kind.

USE TABLE AND PRESERVING SUGAR

Sargent's Int. Nat'l. Auction School. School of proved ability development. Circular Free. Write today. Denver, Colo., Spokane, Wash., or Riverside Cal.

Send for Butter wrappers today.

PLOW UP THE OLD ALFALFA FIELDS

(Continued from page 3.)

to thoroughly enrich it, furnishing sufficient plant food to raise from three to four crops there-after without any further fertilizer.

"As soon as the plowing has been done and the soil prepared by harrowing sufficiently, it then should be planted at once to corn or potatoes, using a potato planter or shovel plow, making a little furrow about three to four inches deep to drop the potatoes into. If a shovel plow is used, run a leveler over them and cover up the sets. If corn is to be planted, it can be done with a corn planter or an ordinary garden hoe as the farmer may elect according to the size of his field.

"I have seen this method tried in a number of our Western States for years, and I am sure it is one of the easiest, simplest and cheapest ways of fertilizing our soils and increasing our tonnage and cleaning our soils from weeds that can be adopted. It will increase the yield of beets over the ordinary methods of farming a total of about twenty tons per acre during the three years.

"Our forefathers, especially in Europe, learned the value of a green fertilizer and they have given the soil a green crop of clover plowed in almost every five years, which has assisted in keeping up the soil fertility during the hundreds of years they have been farmed.

"As most farmers have some acreage of alfalfa, and in view of the fact that it will increase the feed supply where corn can be grown, they should prepare as much land with this method as they can, consistently, and thus get into a proper system of rotation of crops."

THE UNIVERSAL TRACTOR ATTACHMENT

\$275.00

f. o. b. Tacoma

A Real Farm Tractor

"The Universal" converts Ford, Dodge, Maxwell, Studebaker, Overland and other cars into a clean cut, practical light tractor. 1500 pounds of wrought and cast steel traction wheels, gear, braces and hitch, clamped to your auto chassis.

Why Two in One?

If you can't afford an extra auto chassis, then buy a "Universal" and have a perfect tractor and an auto both. "Two in one" means more tractors for the man of modest capital.

Plows Six to Eight Acres a Day.

According to soil. Pulls a four to six-horse load; Wonder for pulling plows, spreaders, harrows, mowers, drills, binders, trucks, and its light weight, broad tractor wheel bearing make it incomparable for cultivating.

Body Should Be Off.

Body of car is removed; no need for body with the "Universal." Special seat provided with equipment. The "Universal" is a farm implement, pure and simple.

Economical-Indestructible

Heavy cast steel hubs and pinion and gear and hitching frame; all rolled steel wheel treads and spokes. Internal gear and all parts easily replaced at a light cost. Fuel consumption and lubricating oil a positive minimum. Gasoline $1\frac{1}{4}$ to $1\frac{1}{2}$ gallons per acre, according to soil.



"Tractor Facts"

and other literature

FREE

"Tractor Facts" tells all about the "Universal." It should be read by every man interested in Tractor equipment. We will be pleased to send you this folder and other important literature free. Write to address as follows: Gerlinger Motor Car Company, Dept. K, Tacoma, Wash.

The Northwest's Great
Tractor Product
for the Northwest



EVERY OUNCE POWERFUL
COMPETENT—A TRACTOR
ALL OVER.

Speed

Plowing $2\frac{1}{2}$ miles an hour, road normal 4 to 5 miles per hour. Cooling equipment furnished for Ford. Other auto engines do not need cooler.

Simplicity

Nothing new to learn. Not an intricate part in the entire attachment. Simple as a farm wagon. You don't have to be a machinist to drive a "Universal." Backs up with implement attached. Turns in a short circle. Has a perfect hitch, that works any way you want it—a hitch the practical farmer will appreciate.

Simple to Attach and Detach.

Remove body of auto and clamp chassis to "Universal" in three hours; put back chassis to auto body in same time. A pleasure car for Sunday, Tractor for Monday. Or get back to auto at end of busy farming season.

No Holes to Bore

No mechanical work—the "Universal" exactly fits your auto. Simply clamped on. Mere monkey-wrench work.

No Rubber Tires

Tires are moved from auto. Rubber tires slip in steering on plowed field. The "Universal" has center flange on front steel tractor rims for steering.

Works in Sand or Mud

The light weight, the 14-inch width of tractor driving wheels, make it ideal for all conditions. Provision made for weighing down with ballast for pulling extra heavy loads.

One Pulling Fool

Ellensburg, Wash. Feb. 17, 1917.

Gerlinger Motor Car Co., Tacoma, Wash.

Dear Sirs:

I thought you would like to know of hard test of the Universal Attachment. The Automatic Work Horse stood today over the worst adobe roads in Washington. The frost is just out of the ground long enough to make it as sticky and heavy as it could possibly be. Two of us, Mr. Frear, expert Machinery buyer for the County and myself, Shorty Mackey pulled 388 gallons of gasoline, 20 gallons of oil and 20 pounds of grease with a standard oil tank as the trailer containing the above 6 miles out to my ranch. That workhorse is sure one pulling fool and it held the ground like a tractor many times its weight and done better than I expected. Both of us are practical machinery men and every test given the Universal Tractor has proven very good indeed. I am wondering how much the blamed thing will pull.

Yours truly,

F. H. MACKEY.

(Better known as Shorty)

This is a Horse Killer for Four Horses—the "Universal" pulls this Spreader with Ease.

DON'T HESITATE—WRITE US NOW.

Gerlinger Motor Car Co.

Manufacturers of the Universal Tractor Attachment
and Gersix Trucks

TACOMA

WASH.



Agents Wanted—

WRITE, WIRE OR PHONE
We may put you at once in touch with our field representative. He may be near you. Responsible firms or individuals wanted to represent the "Universal" in unassigned territory. The "Universal" meets a real need and sells on sight. Large sales in Utah and adjoining states in 1917 assured. Gerlinger Motor Car Company, Dept. K, Tacoma, Wash.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 41

LEHI AND SALT LAKE CITY, UTAH

May 19, 1917

PRODUCTION AND THRIFT IS WHAT THE UTAH FARMER STANDS FOR

Food Production and Conservation Is Patriotism

A Message from President E. G. Peterson, Agricultural College

Utah has never failed in a crisis. She has led the nation in many important contributions to civilization. The most important of her material achievements was the Pioneer conquering of the desert, a part of the continent which was considered worthless until Brigham Young made it a home for man. Utah has led in the development of dry-farming, irrigation practice, and was the first to establish upon an extensive community basis liberal and effective co-operative activity. Her plans of civic and religious federated organization form a model of working efficiency.

There is no question but that Utah will justify today the heritage of yesterday. Her response to the present emergency with its call for patriotic service will undoubtedly be, indeed already has been, immediate and effective.

In subduing the arid West our people have established and strengthened within themselves qualities of industry, devotion, and faith which in this important year will develop a patriotism unsurpassed. They will continue to be quiet—not given to excessive display of their feelings. But to the last drop of blood they will stand firm for home, for country, and for righteousness.

A Message From Secretary of State Harden Bennion

What is the most important factor, the most difficult problem of the great world war? Unhesitatingly I answer FOOD PRODUCTION and DISTRIBUTION. Money, in the past, has been the all-important consideration, so important indeed that it has come to be known as "the sinews of war," and even at the beginning of the present cataclysm, England's most prominent statesman said that this war in the end would probably be decided in favor of the nation that could raise the last few hundred thousand pounds sterling. Then it was thought that men and munitions would be the deciding factors. Money, men and munitions—all are important, but it would seem now that all are available to the opposing forces to such an extent that there is no prospect of either being overcome by reason of the exhaustion of these factors.

The contest, then, seems to have narrowed down to a race for food. In my opinion the United States can perform no greater service to her allies, nor yet indeed to suffering humanity, than to bend every energy toward increasing her food products and placing them

at the disposal of a soon to be famine stricken world. That being true, what folly it is to even permit, to say nothing of demanding that the sturdy farmer boys, the very life and mainstay of the farming operations, or other young men engaged in producing for those at the front that which is more necessary than men, shall forsake their farms and forges, and add to the hordes of non-producers that must be fed. It is a glorious thing to fight for country, but it is heroic to let pass the pomp and panoply of war and put one's life and labor at the disposal of that country in the humble and obscure function of growing grain and potatoes.

All honor to the heroes of war, but a greater service is performed by that young man who, rejected for military service because of a weak heart, had yet heart enough in him, and red blood, and nerve, that he went out and acquired on credit, a two thousand acre tract of land where grain never grew before, and machinery with which to turn it over, and purposes to make it yield its thousands upon thousands of bushels of golden grain for starving humanity.

There is Time Yet to Plant Corn, Beans, Root Crops Every foot of ground should produce food or forage

The Beautifying of Home Grounds

PLANTING OF ROSES

Emil Hansen, Utah Agricultural College.

In Utah the climate is not the very best for roses on account of the high altitude and the dry air. However, by planting varieties best adapted to these conditions and by following directions stated below regarding planting of same, good results may be secured.

Often roses are planted here and there on a lawn or in a row on either side of a walk leading from the street to the entrance of the house. This manner of planting is not to be recommended since it is contrary to the rules of landscape gardening, which, as previously stated, should be "open" and free from any roses or shrubs. Except in rare cases where it seems necessary—such as where the shape of a lawn forms a point where it may be well to plant one or more solitary bushes, this should be avoided. Roses do best if planted in beds specially prepared for them. By this means the cultivation and fertilizing can be done much more conveniently. A bed for roses should be dug to a depth not less than 18 inches and the soil should be thoroughly mixed with well-rotted stable manure. Care must be observed, however, that no manure is put into the holes when planting.

For winter protection of rose bushes a heap of manure should be placed around each bush sometime during December and allowed to remain until sometime in April—depending upon the weather conditions. At this time it can be spread on the bed and dug in. At this time it is best to prune the bushes by thinning out the weakest shoots where they have grown too thick and by cutting the remaining shoots back two-thirds of their original length. The cut should be made just over a bud which is turning outward.

Following is a list of a few varieties which are hardy and well adapted for this climate:

Name	Color
Gruss An Tephitz	Crimson
Kaiserinn Augusta	Cream
Victoria	
La France	Pink
Caroline Testaut	Pink
Alfred Columb	Crimson
Fisher Holmes	Dark Red
Frau Karl Drousky	Pure White
General Jaqueminot	Dark Red
Paul Neron	Large Pink
Ulrik Brunner	Cherry Red
Crested Moss Roses	White and Pink

Diseases of Roses.

Roses are more or less subject to disease—some varieties more so than others.

Powdery Mildew is extremely common to roses. Crimson Ramblers are especially subject to this disease. The fungus frequently appears very early in the season on young buds, leaves, and young shoots. If the attack is severe, the development of the young shoots is checked; the leaves become deformed and curled and fall before reaching maturity. A good remedy for mildew is lime sulphur or Bordeaux mixture. The former is especially to be recommended for spraying during the early spring and during early periods of the disease as it does not injure the leaves on the bushes. It is well to apply a spraying late in the fall and remove all diseased leaves and limbs from the bushes after which they should be burned. The following formula for Bordeaux mixture is recommended:

2½ ounces copper sulphate (blue-stone).

2½ ounces unslaked lime.

2 gallons water.

The commercial lime sulphur has directions for its use upon the container and can be purchased from any well assorted seed store.

Insects and Insect Remedies.

The presence of leaf-eating insects is usually detected by the discovery of partially eaten leaves. If these pests are not checked the result is that only the midrib and the veins of the leaf remain while the fleshy

part of the leaf has been entirely eaten away. By frequently using the garden hose, sprinkling the bushes with full force, these insects may be washed off. But if this proves insufficient, a spraying with arsenate of lead will be a useful substance for destroying leaf-eating insects. Use the following proportions:

Arsenate of Lead.....1-16 pound
Water10 quarts

Sucking Insects.

Sucking insects obtain their food by sucking the sap—for the greater part on the underside of the leaves. When badly infested the leaves curl and thus protect the insects on their under surface. Materials used for the destruction of these insects are as follows:

Nicotine sulphate, Pyrethrum,
Kerosene Emulsion,
Lime Sulphur.

In applying these use considerable force with a fine spray so they will find their way under the foliage. It is important that the solution used should be applied on every part of the plant. Nicotine sulphate can be obtained from any seed store and directions for diluting are found on the container. Pyrethrum (Persian insect powder) can be used at the rate of 1 ounce to 2 quarts of water. Kerosene Emulsion should be used in the following proportions:

Add 1 quart of Kerosene to 1 quart of boiling milk and stir until thoroughly mixed. Then add 12 quarts of water. Mix thoroughly.

Lime Sulphur should be used according to the directions accompanying the packages.

Every individual must have some kind of music and entertainment. Without it the body, mind and soul become dwarfed. One thing the home neglects today more than anything else is entertainment.

It's time we all waked up to the fact that those wives of ours are partners in the games of life that we ourselves are playing; that they deserve to get out of life as much as we do, and that what they want they should have, if the family pocketbook will buy it.—Exchange.

Only concrete floors should be permitted in a dairy barn. They cost more, perhaps, originally, but they are the cheapest in the long run. For one thing, they make it possible to save some of the liquid manure, a very valuable item.

THE ORIGINAL

2-WHEEL TRACTOR

That Does All Farm Work

WITHOUT HORSES

When you come to buying a tractor, whether for a farm of 80 acres, 280 acres or more, there are a number of questions you will need to ask yourself before you buy. Here are some of them:

- Will it CULTIVATE as well as plow?
- Will it do ALL my farm work without horses?
- Will it work on plowed ground without packing the soil?
- Will it do the work quicker; easier; and save on hired help?
- Is it really a ONE-MAN tractor?
- Will it handle as easy as a team of horses, rather than be too heavy, clumsy, and inconvenient?
- Do I ride on the tool where I can see the work I am doing, or will I have to have someone run the tractor while I am operating the farm implement?

The tractor that answers these and all other farm power problems most practically and profitably is the

ORIGINAL MOLINE 2 WHEEL UNIVERSAL TRACTOR

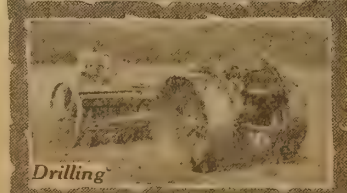
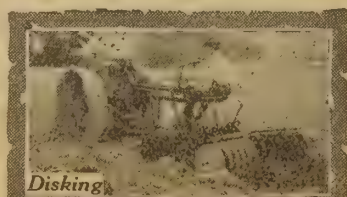
This is the original Two-Wheel Farm Tractor. It pulls two 14-in. plows; will disc, harrow, plant, CULTIVATE all hill and row crops, pull mower; binder, manure spreader, fill your silo—and do all belt work on the average farm. In fact, it will do anything you can do with horses; do it quicker; easier; and with less hired help. It weighs only 2,800 lbs., but all its weight being on its two wheels—all its weight is traction weight. The tool you hitch it to forms the rear wheels and you do not have to pull around a ton of needless weight. It will back up with tools attached easier than a team will back. You can turn around in a small space; get close to the rows and the fences. It is the ideal tractor for the farmer because it costs less than four horses; is as powerful as five horses; does more work than seven horses; is inexpensive to operate; and eats only when it works.

Write for our new Tractor Catalog and read how farmers everywhere are solving the power and hired help problems on their farms; how they are changing the drudgery of farming to a profitable pursuit. Learn how you can make your work easier and get it done on time and grow bigger, better crops. Write today.

MOLINE PLOW CO., Dept. 33
MOLINE, ILL.

The Moline Line includes: Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Spreaders, Mowers, Manure Spreaders, Plows (Chilled and Steel), Reapers, Scales, Seeders, Stalk Cutters, Farm Trucks, Vehicles, Wagons.

Also Stephens Six Automobiles



(Continued on page 15)

DAIRYING

FARM BUTTER

MAKING POINTERS

Wm. Olsen.

Better results can be secured from churning cream than from churning whole milk.

Use floating dairy thermometer. Do not guess at temperatures.

Cream should be ripened at 65 to 70 degrees F.

Stir cream occasionally while it is ripening.

Regulate the temperature of the cream (before churning has begun), so that butter will come in 20 to 30 minutes. Never pour warm or hot water into the cream.

Strain cream into churn to remove lumps of curd or clabber.

Add enough butter color (pure vegetable product), before starting to churn, to give butter a deep straw color.

When butter particles have attained the size of grains of wheat or a pea, stop churning.

Draw off buttermilk through a coarse strainer to catch particles of butter which otherwise would be lost.

Wash butter two times with pure water which has temperature of two to four degrees below that of the buttermilk.

Scald and then soak butter mold worker and ladles in cold water before using to prevent butter from sticking to them.

Salt the butter in the granular condition, using a heaping tablespoonful of best table salt for each pound of butter.

Work the butter just enough to dissolve and distribute the salt.

Mold into brick shaped prints and wrap in parchment butter paper. This butter paper is 8 inches wide and 11 inches long.

Rinse the utensils with cold or lukewarm water to remove the milk, then wash thoroughly with brush, using hot water in which washing soda has been

dissolved. Never use soap on dairy utensils.

Scald all utensils with boiling water, or steam them and let them dry from the heat that is left in them. Never use a dish cloth in the dairy work. Do not attempt to wipe milk utensils dry.

COW TESTING ASSOCIATIONS

Sterling E. Price.

The one big discouraging thing of test associations is that at the end of the first year the farmer thinks they have found their boarder cows so they can drop out until they get a new herd. Just as the association is beginning to run smoothly and just as they begin to reap the benefits from it the farmers begin dropping out and new members have to be taken in or an entirely new association formed. The farmer fails to see that the greatest benefit is to come in the second and third years, they fail to see that it takes only 5 pounds of fat increase per cow to pay the expenses of the tester and they fail to realize that on the average they are receiving more for every dollar invested than by investing it in any other business. This is clearly shown in the Dairy and Food Department Report for 1915. Of the associations investigated they found that the lowest returns for each dollar invested was \$1.19 and the average \$1.85. This a better investment than any of the members of the association could boast of, and yet some of them draw out and some refuse to go in because of the expense attached.

Summing up we can see that the average yearly increase of butter fat per cow is 46.21 lbs. which in itself is a big investment. Besides this nearly every association reports big gains from economy in feeding and general care of the animals. A general improvement in herd values is seen from saving calves from only the best cows, breeding nothing but pure bred bulls, and culling of boarder cows.

General farm improvement and management and a greater knowledge of agriculture in all phases is seen as a result of a collection of the ideas of many farmers and the knowledge the tester gives himself. Social life is greatly improved, marketing and buying methods are improved and the community in general is made more prosperous.

All might be summarized under seven heads:

1. Dairy operations are put upon a business basis.
2. Profit and loss accounts enables one to weed out unprofitable cows.
3. Yearly records indicate the best cows from which to save the calves for a future herd.
4. The expert advice of an official tester is of life long value, it enables one to introduce the most economical methods of feeding and up to date methods of handling the herd as well as the general farm improvement.
5. One can co-operate through his organization with other dairymen in buying and selling.
6. It fosters a better community spirit.
7. It is the best and cheapest way of keeping records.

Taking these facts as presented by cow testing associations, by state experiment stations, and even by the United States Department of Agriculture, all perfectly reliable, one cannot help concluding that these associations are of great economical and social value.

When Uncle Sam has deemed them of such importance to the welfare of the nation that has sent out representatives to help organize and lead associations it seems only depriving ones self of opportunity and prosperity not to see to it that he, as a dairyman, belongs to a well organized association with a good worker and leader as tester, even tho the expense

FEDERAL DOUBLE CABLE BASE TIRES

Driving over rocky, rutty and uneven country roads is the hardest test you can give your tires.

The constant grind, twist and shock will soon show what they are made of.

Federal Tires are built with tough treads to better withstand this wear and tear and give best possible traction.

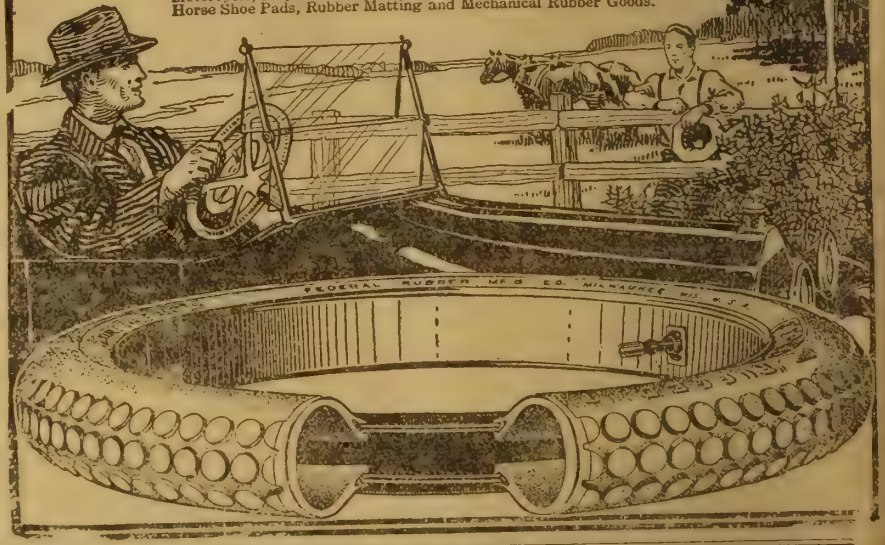
They are safe tires, too. For in the base, next to the rim, are four strong steel cables which hold the tire securely to the rim under severest strains. Yet it slips off easily when necessary.

Made in white Rugged and black Traffik non-skid treads. Sold by leading dealers everywhere.

The Federal Rubber Company of Illinois

Factories, Cudahy, Wis.

Manufacturers of Federal Automobile Tires, Tubes and Sundries; Motorcycle, Bicycle and Carriage Tires; Rubber Hoses, Fibre Shoes, Horse Shoe Pads, Rubber Matting and Mechanical Rubber Goods.



were increased above that now reported by the associations now in operation.

FEEDING ACCORDING TO QUALITY OF MILK

A cow giving three gallons of 3.4 per cent milk requires an altogether different kind of a ration than a cow giving three gallons of 6 per cent milk. Careful investigations by the Missouri, Pennsylvania and Minnesota stations indicate that it takes to produce a pound of 6 per cent milk a little over twice as much in the way of heat and fat as it takes to produce a pound of 3 per cent milk. In plain language, a Guernsey or Jersey requires decidedly more in the way of corn or similar feeds high in heat and fat formers, to produce a given quantity of milk, than a Holstein or Shorthorn. Not only do the Jerseys and Guernseys really require decidedly more in the way of fat formers, in proportion to the amount of milk produced, but they should also be fed slightly more protein or muscle-building material. A 1,000-pound Holstein, giving three gallons of 3 per cent milk daily, should get along fairly well with an average daily ration containing 1.66 pounds of protein and 11.5 therms of energy. But a 1,000 pound Jersey or Guernsey giving three gallons of 6 percent milk requires, in her daily ration, about two pounds of protein and eighteen therms of energy. This is on the assumption that it takes the same amount of feed to run the bodily machinery of the 1,000-pound Holstein as it does of the 1,000-pound Jersey or Guernsey, and that for each pound of milk, the Holstein requires about 0.45 of a pound of protein and .22 of a therm of energy; while the Jersey or Guernsey requires, for each pound of milk produced, about .06 of a pound of protein and .5 of a therm of energy.

Each cow is a law unto herself. But we can feed much more intelligently if we know just about what a cow weighs, her average milk production in pounds daily, and the



Save Time For More Jobs

GET the big run with a Red River Special. It's built for fast work and GOOD work. Beats out the grain by force. You can speed up without losing grain or risking breakages. Make every minute count. Write us for the Red River Special paper. Learn about the big cylinder with its surplus teeth and extra large concave surface, and the "Man Behind the Gun" which gets 90 per cent of the grain. Farmers look for and hire the man with the

Red River Special

It saves enough more of your grain and time over other machines to pay your thresh bills. "We know we saved our thresh bill," says Joe Goette and 10 other farmers of Herndon, Kan. Every bushel counts in the profits you make, and when you put the farmer's grain in the granary instead of the stack you can be sure of his business next year. Write us—also learn about our "Junior," the younger brother to the Red River Special. Just the right size for home threshing. Write

Nichols & Shepard Co.
In Continuous Business Since 1843
Builders Exclusively of Red River Special
Threshers, Wind Stackers, Feeders, Steam
Traction Engines and Oil-Gas Tractors
Battle Creek Michigan

average percentage of fat in her milk. It pays to remember that a pound of Guernsey or Jersey milk is considerably different from a pound of Holstein or Shorthorn milk, and it requires different feeding to produce it economically.—Wallace's Farmer.

If you want money, drop us a line.

We loan on first mortgages on Utah farms or Salt Lake City real estate at reasonable rates.

Prompt action and fair treatment if you do business with us.

Palmer Bond & Mortgage Co.

WALKER BANK BUILDING
SALT LAKE CITY

This bank with the capacity to handle business of large proportions, has a spirit of helpfulness for the small as well as the large depositor.



Walker Brothers Bankers

SALT LAKE CITY

QUESTIONS and ANSWERS

Payson, Utah.

Utah Farmer:

Dear Sir:—I have a three year old heifer with her first calf which I prized very highly. About the sixth month of her lactation period I noticed that she was lame in all four legs and had considerable difficulty in getting around. She first lost control of her front quarters and then her hind quarters, and now is apparently helpless, and has been so the last three weeks. I have tied her up in a sling but she does not seem to get any better or worse. She has a good appetite and will eat as much as she did before she was sick.

I have been feeding beet pulp and I think that is the cause—because people who have been feeding it have cows showing every symptom of the disease.

Is there any thing in beet pulp that is injurious to dairy cattle? My cow has had all the roughage she would eat and has been kept in a warm dry place. Is there any cure that will not take too long? I kept a cow last summer in the same condition as the

one I have now but I had to kill her. Respectfully,

H. J. Curtis.

Answered by Dr. H. J. Frederick.

From your description it appears that a regular paralysis has taken place, of the different parts of the body. This is often brought on by feed and in your case if you have been feeding a large amount of pulp it could be possible that this is responsible. Quite a number of cattle that are fed pulp excessively are affected with digestive disturbances as well as regular poisoning. Abscesses often form in the liver and if these should break paralysis or complete poisoning of the animal may result. Where a condition of this kind exists it would be well to change the feed entirely in order to overcome the trouble. It would not be well to keep an animal of this kind in a sling for any length of time and it would not help much. When they once get in a helpless condition it would be just as well to destroy them and not allow them to suffer longer.

CULTURE OF BEANS

Overon, Nevada.

Utah Farmer:

Dear Sir:—Please let me know in your next copy the best way and the right time to plant beans in a real hot country?

I like your paper fine and have gotten a good deal of information from it.

Yours Very Truly,

Clarence Lewis.

Answered by Howard J. Maughan, Assistant Agronomist, U. A. C.

Beans should be planted in the spring or in early summer as the seeds will not set if the plants bloom during extremely hot weather. They must be sown deep enough to leave the seeds in moist soil. The soil should be irrigated before planting if it does not contain sufficient moisture to germinate the seeds. Beans are usually planted in rows 30 inches apart. In a hot climate, hills 12 to 18 inches apart in the row should give better returns than if the seeds are sown in drills as a mulch may be maintained between the hills. About 30 pounds of small navy beans are required for an acre when 2 to 4 seeds are planted in a hill.

WARTS ON COWS' TEATS.

Brigham, Utah.

Utah Farmer:

Would like to know how to remove warts from cow's teats? I have seen what I want in your paper some time ago but now I need the information I am unable to find it.

A Subscriber I. C.

Warts, where they have a distinct neck, are usually removed by first cleaning the part with a good disinfectant, then clipping them off with clean scissors, and painting over the wound with silver nitrate or some other caustic.

Where they are not well defined and have no regular neck we sometimes apply castor oil daily in order to help remove them. However, this is not possible in every case, and usually the ones that protrude from the teat cause trouble.

TUMORS IN COWS' TEATS

Ft Duchesne, Utah.

Utah Farmer:

Dear Sir:—I have a three year old cow that had lumps in her teats, which did not seem to hinder until after her second calf and then they seemed to stop the milk from passing into the teat. The lumps seem to be a sort of hard gristle and are about the size of a small pea, and are located next to the udder. When running a stick made for the purpose up into the teat, each lump almost form a ring around the stick.

As she is a valuable cow would like to know if there is anything that could be done for her.

Respectfully,

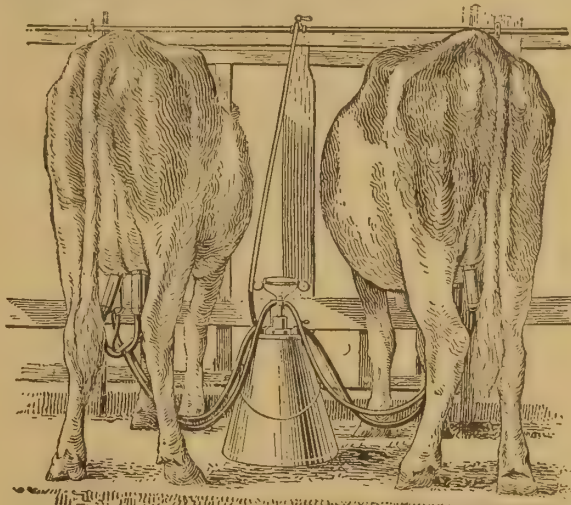
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Teats After Each
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Salt Lake City, Utah

Answered by Dr. H. J. Frederick.

Tumors very often form inside of the cow's teat where they obstruct the milk duct. These tumors are of fibrous nature and in most instances do not allow the milk to flow freely or at all. In such a case it is necessary to pass a tumor extractor up into the duct and thus effect a passage through the regular duct and overcome this trouble. Sometimes by only passing a milking tube to enlarge the opening the condition can be overcome. Any instrument used on the teats or udder should be thoroughly sterilized and great precautions taken so as not to contaminate the udder. Milking tubes or tumor extractors or slitters are usually sterilized by boiling thoroughly before using. The end of the teat is well cleaned with a disinfectant, then it is permissible to pass an instrument into the milk duct and proceed to overcome the trouble. This work should only be done by one who understands the anatomy of the parts and one who is prepared to do such work.

SEED TESTING.

When one recalls the poor stands of corn, clover and wheat he has commonly seen and the reported yields of these crops and also observes the many noxious weeds growing in gardens and fields, he recognizes at once that better seed should be used.

A sample quantity of seed may contain: (1) Live seed; (2) dead seed; (3) seeds of various useful plants; (4) broken seeds, dirt, chaff, etc.; (5) weed seeds. Of these, dead seeds, broken seeds, chaff, and dirt lead to poor stands, disappointment, and waste of time. The various kinds of foreign seeds, whether of useful plants, local weeds, or noxious weeds, do a definite injury to the farmer or

gardener who is so unfortunate as to plant them. They require time and labor for their destruction and removal.

It is said that to be forewarned is to be forearmed. If the gardener and farmer are to escape the losses from poor seed they must know the quality of seed to be used. Seed testing if faithfully done will indicate the proper means of securing good seed. If the seed has low viability with weak germs it should not be used. If it contains chaff and broken seeds it should be cleaned. If it contains noxious weed seeds it should not be used at all. It might better be destroyed.

There are various means of testing seeds for viability such as the "rag doll," blotter, sawdust, and sand testers. The chief purpose of each is the maintenance of a constant, though moderate supply of moisture, heat, and air. A few seeds germinate better in light; most seeds germinate better in darkness.

The determination of the broken seeds, chaff and dirt is a matter of weighing the sample, removing these constituents, re-weighing and computing the percentage of the same. The determination of the other useful seeds, common and noxious weed seeds is made by observation and counting. It is usually desirable to identify the weed seeds by comparison with sample furnished by the experiment station. The number of kinds of weed seeds is usually noted.

With the larger seeds farmers and gardeners are more concerned about the viability of seeds as the weed seeds are easily removed. In case of grass, clover and other small seeds, the purity of seeds, is quite as important as viability, since so many seeds are similar in size and appearance.—Wright A. Gardner.

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upon application.

Conserve the water supply by using the early
water. Put it on your alfalfa if it needs it.

A balanced ration is important for the grow-
ing calf or any kind of live stock. If you want
the best results make a balance ration and keep
the young stock growing.

The small fruits will soon be on the market.
Plan now to conserve every bit of it. Eat more
of the garden fruits and vegetables. Save the
wheat supply in this way.

Fight the farm pests as you would a foreign
enemy. What counts at the harvest time is
the amount you have. Don't allow weeds and
other pests to rob you of a good harvest this
year.

Avoid waste on the farm. Care of implements,
needed repairs, unprofitable use of time or mater-
ial are only a few of the ways that waste occur
on the farm. Saving is just as necessary as pro-
ducing.

With September wheat selling at \$2.55 in Chicago,
it should make every one take notice. Greater
care must be taken to get a maximum crop. Bet-
ter irrigation and care in harvesting will both
help to increase the amount at harvest time.

Start your fight now on the house fly. Kill
the first ones that come out from their wintering
places and prevent their reproduction. Remove
all breeding places, such as manure piles, rubbish
and decaying organic matter. Fight the fly from
the start and start now.

Produce all the chickens possible. Eggs will
be high this year in fact the price is now nearly
double what it was a year ago. Hatch just as
many chicks as possible. Eggs are good food
and will bring a price in proportion to others. Go
just beyond the regular time of raising chicks
this year in order to increase the poultry pro-
ducts.

Look after your hogs. See that they get extra
good care so that you can get extra good results.
The time spent will be well repaid. Think of
hogs selling around the 16 cent mark.

KEEP THE FEMALE ANIMALS

We were pleased to learn that steps are being
taken by some of the sheep men to keep the
ewe lambs and not put them on the market.
Bankers will be asked to carry the livestock men
for another year. If such a plan can be carried
out it will help to increase the production of live-
stock.

It is very important that the breeding stock
be kept—should not be sold at any price. Keep
the female calves, colts, pigs, in fact all kind of
live stock.

Those who have money should encourage this
movement by loaning the live stock men and
farmers enough money, so they can keep the
female stock until the present condition of a ser-
ious shortage of live stock is over come.

NAME AND RECORD YOUR FARM

For a number of years we have urged the idea
of naming the farm and selling the products un-
der that name.

At the last legislature a law was passed giving
one an opportunity to name and record his farm,
and no one else can use that name.

We suggest that you get your farm name re-
corded at once. Many may want the same name,
so get busy and send yours in to the State Auditor
The fee is small, only two dollars, and gives you
a permanent right to the name when properly
recorded.

Every farmer should think enough of his farm
to give it a name. An article on another page
gives you some suggestions and tells more about
what is necessary in order to comply with the
law.

TAKE CARE OF THE FRUIT

From present reports, the indication are we
will have a good crop of fruit, unless there is a
decided change the price will justify giving your
fruit the best of care.

Look a little ahead and put your spraying out-
fit in good working order. See that the pump
is working—does it need new washers? Do not
put off the overhauling until the time you should
be spraying, and then have to wait while you
fix up the outfit. Some new extras may be need-
ed and it will take time to get them.

Of course it will cost both time and money for
material to spray the fruit trees but it will pay.
You can not sell wormy apples.

A little careful pruning in the way of cleaning
up the trees or bushes should be done right now
if they need it.

Look up the market conditions. Have your
containers, boxes or other methods for shipping
and marketing your fruit. Are you planning to
bottle, can or dry the surplus fruit. Now is the
time to begin thinking about these things.

PLOW UP OLD ALFALFA

One of the big problems of the year is to pro-
duce enough feed for our live stock. Last year
the prices of alfalfa was very high, how can we
help the situation this year. By plowing up some
of the old alfalfa fields and planting them into
corn this year.

Some of our alfalfa beds look more like a
dandelion patch or cheat grass bed than an alfalfa
field, not more than one, two or even three tons
of hay can be produced from such fields. If
plowed up and planted to corn the land will bring
several tons of feed. On the average six or
seven acres of such land will fill a 100 ton silo.

If you can not build a silo join with your
neighbor and fill one, do a little co-operative
work in order to meet the unusual conditions.

The success of plowing up alfalfa depends very
much on how it is done. Articles have appeared
in our paper several times giving details as to
the best methods in doing it.

TIME TO PLANT BEANS

Now is time to plant some beans. Get the
"Mexican Pinto" or some other variety that will
mature in about 90 days.

There is enough vacant land that has not been
used in large or small plots, so that you can
plant a reasonable amount of beans.

No other plant has the food value that we find
in the bean. In the past we have joked and
laughed at the bean, but the prospects are that
thousands of people will be glad to get beans.

There are so many ways to cook the bean that
it can be served each day for a month and do it
in a different way each time.

It keeps well, is easy to handle and can be
shipped for a long distance. We were told that
one large buyer is now offering ten cents a
pound and will contract for ones entire crop at
that price. A thousand pounds is considered a
fair crop so beans should be profitable.

Use the small plots of ground around the farm
and plant them to beans. Make every foot of
ground produce something. Beans are good
things to plants.

DON'T SELL NOW.

We know it is a very serious thing to advise
the farmers about selling unless we are absolute-
ly right. Just at the present time some people
seem to be "loosing their heads." Any man
who has live stock or foods of any kind, can af-
ford to wait awhile before he begins contracting
with speculators.

We ought to know that any man who is willing
to speculate on the market price will not pay you
as much as he expects to get. He backs his judg-
ment with his money and usually wins, of course
he makes mistakes, but not very often or he
would not stay in the business.

We are told that the buyers are offering 12½
cents a pound for lambs a price so high that some
men are tempted to sell. On the other hand it
is expected that lamb may sell for 15 to 20 cents
a pound before fall.

Another man said he was buying potatoes at
75 cents a bushel contracting now at that price
for next fall delivery. Some have even sold for
50 cents a bushel on a contract. Now if these
men can afford to take the chance of getting a
dollar or more a bushel, why can't the farmer do
so?

Make a careful study of the market before you
contract to sell your products.

CLOSING THE SCHOOLS

When the suggestion was made some time ago
that our schools be closed to give the boys and
girls a chance to help their parents on the farm,
the teachers and officials did not take kindly to
it. The matter was finally adjusted so that any
student, meeting the required conditions, was re-
leased to go to work. At some of the high
schools a greater part of the students were ex-
cused and the rest might just as well have been,
for all the real good that has been accomplished.
I have talked with a number of students and a
few teachers and, in nearly every case, they said
that they were not getting much out of school
since the others were excused.

This was not the fault of the teachers alto-
gether for a very unusual condition exists. Even
now many people do not seem to realize the
necessity of producing all the food possible. The
real seriousness of the food shortage and war
conditions has not come home to them.

Some day soon our school officials are going to
modernize our school work. They will hire the
teacher for the year. Six months will be spent
in school room and the other six putting in prac-
tice what was taught in the school room. Local
conditions must be met; the same rule will not
apply to Salt Lake City schools as it would to these
of the farming communities.

The experience we have just gone through should
be a lesson to our school people, and before an-
other school season possible steps can be taken
that will help modernize our schools.

ALFALFA, CORN AND SUGAR BEET ROTATION

(Continued from page 3)

Immediately following the plow, use the plank float consisting of three planks, made up "shingle" fashion. Drive the same direction with the turning plow. Ride the float. Unhitch from the plow twice each day and "plank" the freshly turned furrows.

This treatment firms the soil and prevents the sod edges from turning up. Then follow with a sharp disc, lapping one-half. The acme or blade harrow is better than a tooth harrow. The disc or blade harrow will chop the green roots and leave them in the soil, rather than on top of the soil. The tooth harrow is liable to pull the roots to the surface where they will not so readily decay and where they will bother in cultivation, to some extent, at least.

If the corn is checked to allow cultivating both ways, drop three kernels per hill, 3 feet apart, if the planter misses three kernels, let it be four rather than three kernels for on such fields, the corn will "succor" badly unless the stand is uniformly heavy. Where there is an excess of available fertility, the corn plant will throw out succors in an effort to utilize all of the plant food. If the corn is drilled instead of checked in hills, there should be a kernel every ten to twelve inches apart in the row. Rows three feet apart will always be found most convenient to cultivate.

After planting, "blind" cultivate, means follow the planter mark with the cultivator and throw a moderate amount of soil over the row before the corn comes up. About the time the corn plants show through the surface, harrow with a spike tooth harrow, allowing the teeth to slope backward a trifle. This holds all weeds in check until the corn has gotten far enough along to cultivate readily.

Under normal conditions, irrigation will not be needed until about tasseling stage, at which time, heavy drafts for moisture is always made upon the soil. The irrigation furrows should be opened deep allowing the water to get down to the roots rather than to flood the surface.

In the moderately high altitudes, such fields may yield from 15 to 20 tons or even more of splendid silage to the acre. The silo will give at least one-third more feed value per acre than can be had by feeding the mature corn and fodder. From 5 to 7 acres of such corn will fill a 100 ton silo. Last winter, many owners of silos found their investment gave them 100 per cent returns upon their money invested and it is likely that they will be equally as good an investment for many years to come.

Fall plow the corn stubble and the same land will yield from 60 per cent to 75 per cent larger tonnage of beets the following year than can be had on similar soil otherwise treated. The alfalfa value will be seen in three or four crops that may follow and the soil will work much more friable and very much less irrigation water will be needed for several seasons, because of the humus deposits in the soil, through the decaying green alfalfa and alfalfa roots. Do not under any circumstances, grow more than three crops of beets in succession; better if only two crops of beets; then sow small grain and re-seed to alfalfa.

There are many farms where alfalfa, corn and sugar beets may be kept in a fairly short rotation and increased yields of beets may be had; more forage made available and therefore more stock kept. Alfalfa yields will be larger and better. Insect pests and disease in alfalfa and beets very greatly reduced. Soil fertility replenished and the texture of the soil improved.

A later article will discuss siloing beet tops and crowns in a natural earth silo; with this practice, an acre of beet tops and crowns will yield fully as much feed as will one half acre of alfalfa.

Seed corn should be had from a

neighbor, if anything reasonably good can be had. Seed brought from a distance, especially from a more southerly latitude or lower altitude makes a larger growth of stalk but does not ripen the ears so well and consequently the quality of silage is not so good.

The practice set forth in this article is not new.

Most readers have known of the practice for many years. Only a comparatively few have put it into use, largely because they dislike to sacrifice the summer growth of alfalfa. The growth that is turned under is the very best investment. It is the best possible practice.

NO SHRINKAGE IN WHEAT OR OATS

Utah Farmer:

Will you please answer in your next paper, How much shrinkage is there in wheat and oats from fall to spring.

Answered by Dr. F. S. Harris.

At the Utah Experiment Station an experiment was begun in 1911 to determine the loss in grain during storage. Oats and wheat raised both under irrigation and dry-farming were included in the test. At harvest time grain of different varieties was placed in sacks in a barn and weighed every month for two years. Contrary to what was expected, there was a gain in weight of every sack. The gain continued each month until March; then there was a slight loss during the summer months, but the grain did not at any time get down to its weight at harvest. The second winter the gain was even greater than the first. During the first winter the gain varied from 2 to 4 per cent. Details of the experiment may be learned from Utah Station Bulletin No. 130 a copy of which may be had free on application to the Station at Logan.

KIND OF CATTLE FOR RANGE Teasdale, Utah.

Utah Farmer:

Will you tell me in your next issue of the Utah Farmer, which is the best cattle to run on the range, the Short-horn or Hereford.

Respectfully,

Vern Snow.

Answered by Dr. W. E. Carroll.

For several years advocates of Hereford and Shorthorn breeds of cattle have been trying to determine which breed is most suited to range conditions. So far the question has not been definitely answered. There is this to say, that the Shorthorn where feed is fairly plentiful both summer and winter will grow to somewhat larger weight at a given age than will the Hereford on the average. The Hereford on the other hand have the name of rustling better on a scant range and they also seem to fatten more easily at a young age. The young Shorthorn instead of fattening seem to turn their feed to growing.

SORGHUM

Cane may be sown late in June and yield two to three tons of excellent forage. The Amber is a good variety. Land that has been too wet for earlier planting to other crops may be fitted late and sown to cane. If a drill can be had, sow in rows 6 or 8 inches apart. A thick stand will give a finer growth of stem, not so coarse as will be had with a thin stand. The small stem is more nutritious. Be sure to cut the cane before the first killing frost in the autumn. Pile in to cocks and it may be left in the field until a convenient time to haul in for winter feeding. It is a splendid winter supplemental ration that is relished by all kinds of stock, particularly by cows and brood sows. An acre or two of otherwise waste land will yield a crop in value equal to the taxes on a good sized farm.

Kaffir Feterita Millet Rape

Kaffir and feterita are non-sacharine crops which may be planted late and made to yield excellent silage or forage and dry grain. They

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GRIND ALFALFA HAY

You can grind a ton of alfalfa hay and it will do as much good as feed as two tons otherwise.

You can mix ground alfalfa hay with other feeds and it will put any kind of live stock in good condition for the market.



Send for a sample of ground alfalfa hay made on a Hochenauer Mill. You will be surprised to see how your stock like it. Every feeder and hay grower should have one. Write for full particulars.

Landes & Company

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SALT LAKE CITY, UTAH.

are short season crops that will yield surprising returns, if you have not tried them. Drill in rows three feet apart and cultivate the same as corn.

Millet and rape may also be sown late. Sheep and pigs do well grazing

on rape, which may be seeded broadcast between the corn rows, at the last cultivation. Millet is valuable chiefly for forage and it should be cut before the seed ripens.

HOME

PRACTICAL ECONOMIES.

RENOVATION OF MILLINERY MATERIALS.

Velvet. Velvet may be freshened and wrinkles removed by steaming. To steam, put a wet cloth over a hot iron and draw the velvet back and forth through the steam, having the wrong side of velvet next to cloth. Brush with a soft bristle brush to raise the pile.

Spots may be removed from velvet and plush by sponging with chloroform (never use in a closed room). Chloroform will often restore color to faded materials.

Felt. Felt of any color may be cleaned with sandpaper. Cover a small wooden block with No. 00 sandpaper and use the block as a brush. Begin at center top of hat and proceed in a circular direction until the whole hat has been cleaned. Remove the sandpaper, cover the block with velvet and go over the hat as before. The velvet will smooth down the felt. If the velvet block is rubbed on a hot iron and then on a block of paraffin wax it will be still more effective.

White felts may be cleaned by rubbing with French chalk, powdered borax, or cornmeal.

Natural colored straw. Hats of milan, leghorn, etc., in natural color may be cleaned with a paste of the juice of one lemon and two tablespoonfuls of sulphur. Rub the hat thoroughly with this paste and when dry brush off the powder.

White straw. White straw hats including panamas may be cleaned with a weak solution of oxalic acid water. Dissolve a tablespoon of oxalic acid in one pint of water. Scrub the hat quickly with the solution using a stiff brush. (Do not put the hands in the acid). After the hat has been cleaned rinse the acid off by going over the hat with a cloth wet in clear water. Avoid getting the straw too wet as this causes the hat to lose its shape. When nearly dry the hat may be pressed lightly under a damp cloth. Prepared cleaners for white straw may be purchased at the drug stores.

Panama. Panamas may also be cleaned by washing in soap and water.

Colored straws. Colored straws if not faded may be freshened by washing with a sponge wet in wood alcohol. This method is very good

for black straws. Wood alcohol being poisonous, should be kept away from children.

To renew faded straw hats. Badly faded or soiled shapes can be dyed the same or a darker shade with one of the several reliable hat dyes for sale at drug stores. When carefully applied the hat may be made to look like new.

To stiffen straw. Shapes which have lost their stiffness may be stiffened by pressing lightly under a damp cloth. Never press directly on any straw; have a cloth between the straw and the iron.

To change the shape. To change the shape of a straw hat dampen the hat and while soft and pliable, bend into desired shape. Catch up brim where desired with strong thread. Leave until dry.

To make a brim droop, hold the hat up and press a bit of the under brim at a time. The movement should be sideways from the crown outward.

Lace. Silk laces should be dry cleaned or washed in gasoline. Cotton laces can be washed in soap and water. Fill a fruit jar half full of warm soap suds or borax water. Put lace in jar and fasten top securely. Shake well until lace is thoroughly washed. Refill jar with rinse water and rinse by shaking the lace in the jar. Take out the lace and spread it on a dry cloth pulling the scallops into shape. When dry, the lace may be pressed lightly. In washing any kind of lace the main point to remember is to avoid rubbing.

Ribbon. Ribbons may be cleaned by sponging with denatured alcohol. Good ribbons may be washed in soap and water. Always press between cloths or paper.

Feathers. White or colored feathers may be washed in a thin paste of gasoline and flour, or gasoline and plaster of paris. To one pint of gasoline add two tablespoons of flour or plaster of paris. Clean the feather by putting it in the paste and rubbing it from the stem to the tips of the flues. Do not rub the flues back and forth but move the fingers always in the same direction. When the feather is clean, draw it through the tightly closed hand to squeeze out the gasoline. Shake a few minutes; then finish drying in cornstarch. Spread the cornstarch on a piece of tissue paper and rub the feather lightly in the starch until dry. Shake the starch out and the feather will be found to be clean and fluffy.

Washing a white plume. When a white or light plume becomes badly soiled it can be washed with soap and water, the disadvantage of this method being that the feather must be recurled. Make a suds of ivory soap and warm water. Let the feather soak in this an hour or two. Then wash by drawing through the hand. When clean rinse the feather first in clear water and then in wood alcohol. After squeezing out the alcohol dry the feather in cornstarch. Recurl, using a silver knife.

Black or dark colored feathers. Black or dark feathers may be cleaned by washing in wood alcohol. Shake the feather until dry.

Fur. Fur may be cleaned by brushing thoroughly with very hot bran. Use a stiff brush. Have the fur stretched firmly to the ironing board. After brushing, shake the fur to remove the bran. This not only cleans the fur but also makes it glossy.

Flowers. Soiled flowers become freshened and stiffened by shaking them over a steaming cloth. Faded flowers can be dipped into a tinting preparation or they can be touched up with a small paint brush and usually look like new. To make the tinting preparation, dissolve oil paint in gasoline. The oil paint can be bought in small tubes in a great variety of colors. Such things as chiffons, thin silks, malines and feathers can also be tinted in gasoline and oil paint. Tinting is different from

You Know This Bread Is Clean and Good

Whenever you are in doubt about other breads, you're always sure of the quality, flavor, cleanliness, and goodness of

ROYAL BREAD



The bread that made
mother stop baking



Royal bread is a favorite in practically every nook and corner of the intermountain west. It has maintained a high standard for years—always dependable. Tell your grocer to send "Royal."

Royal Baking Co., Salt Lake City, Utah

A Sure Tier *In Tall or Short Grain*

For delivering well-tied, square-butted bundles, bound anywhere from seven inches to twenty-five inches from the butts, no binder made can excel the

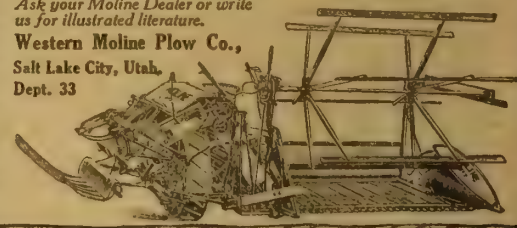
Moline-Adriance Grain Binder

Cutting apparatus is the heaviest and strongest made—heavy guards will not break or bend when striking obstructions.

All working parts driven direct—strain is equally divided. Light draft, easy control, long life. Ask your Moline Dealer or write us for illustrated literature.

Western Moline Plow Co.,
Salt Lake City, Utah,
Dept. 33

THE MOLINE LINE
Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Vehicles, Wagons.



dyeing, and only light shades can be produced—red paint tinting pink, etc. Tinting should never be done near a fire or in a closed room. Always test a sample before putting in the article to be colored.

A SLICE OF BREAD

"Many a Mickle Makes a Muckle."

A single slice of bread seems an unimportant thing. In many households one or more slices of bread daily are thrown away and not used for human food. Sometimes stale quarter—or half—loaves are thrown out.

Yet one good-sized slice of bread—such as a child likes to cut—weighs an ounce. It contains almost $\frac{3}{4}$ of an ounce of flour.

If everyone of the country's 20,000,000 homes wastes on the average only one slice of bread a day, the country is throwing away daily over 14,000,000 ounces of flour—over 875,000 pounds, or enough flour for over a million 1-pound loaves a day. For a full year at this rate there would be a waste of over 319,000,000 pounds of flour—1,500,000 barrels of flour—enough to make 365,000,000 loaves.

As it takes $4\frac{1}{2}$ bushels of wheat to make a barrel of ordinary flour, this waste would represent the flour from over 7,000,000 bushels of wheat.

Fourteen and nine-tenths bushels of wheat on the average are raised per acre. It would take the fruit of some 470,000 acres just to provide a single slice of bread to be wasted daily in every home.

To produce this much flour calls for an army of farmers, railway men, flour-mill people. To get the flour to

ALFALFA SEED FOR SALE

Best Grade.....14c
Good Grade.....12½c
Good Grade Seed somewhat dark.....10c
Less than full sacks ½c lb. higher. All prices f. o. b. Oasis or Lynndale, Utah. These three grades all run high germination test.

Cash must accompany the order.

A. A. HINCKLEY
Hinckley • Utah

the consumer calls for many freight cars and the use of many tons of coal.

But, some one says, a full slice of bread is not wasted in every home. Very well—make it a daily slice for every four or every ten or every thirty homes—make it a weekly or monthly slice in every home—or make the wasted slice thinner. The waste of flour involved is still appalling—altogether too great to be tolerated when wheat is scarce.

Any waste of bread is inexcusable when there are so many ways of using stale bread to cook delicious dishes.

Pure, White and sweet

What more could you ask? This sugar is ideal for all purposes. Fruit canning and preserving time will soon be here. Have you your supply of

**EXTRA FINE
Table and Preserving Sugar
ABSOLUTELY PURE**

You may order any size bag—10, 25, 50 or 100 pounds.

Call your dealer now for a bag of this perfect sugar. Order it by name.

Made by
**UTAH-IDAHO SUGAR
COMPANY**

Every One Should Help

The President of the United States has made an appeal to the Nation which must stir the heart of every patriot and inspire him to extra effort in the service of his Country.

From the latest reports of our representatives in many countries, we are satisfied that the President's statement as to the crop situation is most conservative. The whole world is now facing a shortage of crops. I fear the situation is even more serious than we realize. Strenuous effort must be made to lessen—and if possible to avoid—the disaster which would be world-wide if our present fears regarding the crop shortage become a reality.

The United States should avoid the mistakes made by the European countries now at war. In some countries the necessity for preserving the herds and the breeding of cattle was overlooked. The result was a failure in the supply of meat and butter. In other countries, as the war progressed, owing to the scarcity of labor, much land was left untillied, resulting in a shortage of crops.

Our people should heed these lessons and avoid both these dangers. On the one hand we must cultivate every available acre, so that our food production—upon which with that of Canada, the world is depending to relieve its hunger—may be as large as possible. We must also keep up the number of our cattle, sheep and pigs, so that with economical consumption the supply of meat shall be sufficient. Let us not drift until it is too late to take the steps needed to enlarge and protect these sources of food supply.

No less important than increased production is the lessening of waste. Economy is the watchword of the day. Expenditures should be regulated, not by the size of a man's bank account, but the merits of each transaction. Wastefulness, bad at any time, today is a crime against society.

The patriotic women of the Nation can be of inestimable help, especially in the economies of the home. Never was there a time when they could exert such power as they can today. In a crisis like this the burden falls especially heavily upon them, and they have already demonstrated their ability to think independently, speak wisely, and act forcefully.

In this time of trial, let us set ourselves to answer the question: What can we do with loyal service to respond to the call made by the President of our Country?

SALT LAKE TO HAVE MUNICIPAL MARKET

Salt Lake is taking a big step in the conservation plan not only the conservation of food but in the conservation of energy, this is to cut out the middle man and bring the producer and consumer together. The step Salt Lake chooses to do is to establish a municipal market. This is going to mean much to the farmers of this state especially those in Salt Lake, Utah, and Davis Counties.

Earl Bennion a graduate of the Agricultural College and a thorough farmer has been employed by the City as City Market Master and can be depended on to look after the interests of the farmer. Mr. Bennion is spending the greater part of his time this month in the country interesting the farmer in bringing his produce on the market himself that he may get the most out of it. The City market management expects to co-operate with the farmer through the local news papers giving information as to prices obtained, on market, eastern prices, standard packages and containers where most cheaply obtain, what they should do to conform with the law and all like subjects that will be of vital importance to the farmer.

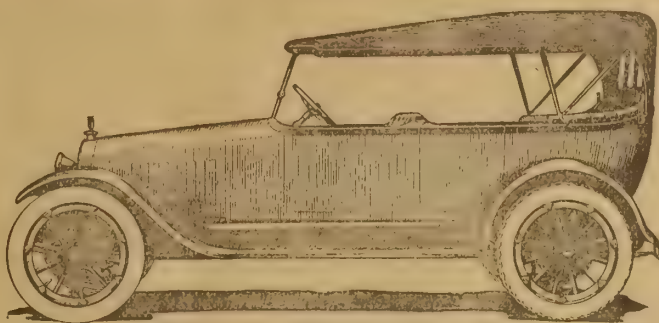
The Salt Lake Market is located this year on Auerbach Field the vacant block directly north of the City and County Building. The farmers will enter the market by a gate

in the South side of the block and the market proper will face 2nd East, and 2nd East will be restricted to buyers only.

Auerbach Field is being leveled, graded, and equipped with stalls, tied mangers, watering trough, and camping grounds are being provided free of cost. A complete delivery system is being evolved where by a consumer can have his purchase delivered for a nominal fee and with no inconvenience to the producer.

A thorough campaign is on throughout the city to get the people to conserve and conserve in large quantities and the Municipal Market is being advertised as the greatest means by which conservation may be accomplished. The high cost of living is stimulating the people to cut out the middle man. With proper support given the market by the populace of Salt Lake and a satisfactory delivery system it looks as if a farmer will be able to unload his entire load as quickly as he could to wholesalers and to much better advantage.

The market will be open on Tuesday, Thursday and Saturday from 5:30 A. M. to 10 A. M. This will suit the farmers because it will give them a day to get home and gather and pack their produce for the following day. However, if the trade justifies it the market will be opened every day, but it is plain to see that it is advantage to the farmer to shorten the market period because it will mean a greater number of buyers in a shorter period.



Chalmers 7-Passenger Touring Car—Price \$1475 Detroit

Chalmers Is Built For Long Service

Chalmers builds for long life. Sturdiness is in every part. Severe usage and hard going only serve to prove Chalmers construction.

The Chalmers is a light weight, roomy car. Light weight insures right road performance and true economy. Long springs give easy riding qualities both on good roads and in the ruts.

Go to the nearest Chalmers dealer. See a Chalmers. Examine the car feature by feature. See the beauty of the

Chalmers lines. Note the fine body finish. The upholstery is genuine leather. The lamps are large and powerful. Point by point the Chalmers appeals to your good judgment.

Chalmers price is low for such quality. A cheap car is poor economy. A low priced, high grade, well performing car, such as the Chalmers is a genuine investment.

Ride in a Chalmers. You will then know its value.

Touring Car, 7-passenger	\$1475	Touring Sedan, 7-passenger	\$1850	Limousine, 7-passenger	\$2550
Touring Car, 5-passenger	1250	Roadster, 3-passenger	1250	Town Car, 7-passenger	2550
		Cabriolet, 3-passenger	1625		

(All prices f. o. b. Detroit, and subject to change without notice)



Chalmers Motor Company
Detroit, Michigan

Mr. Bennion reports that a trip through Utah and Davis Counties disclosed a prospect for a bounteous fruit and truck crop. Salt Lake according to estimates and statistics has in the past only consumed from one-half to one-third as many vegetables as other cities that have public markets and proper facilities for distributing. If Salt Lake reaches this maximum there will be a place for all the produce that can be grown in the adjoining counties.

BEANS BRING \$288 AN ACRE

Howard J. Maughan.

From a four year's test of the ten best varieties of beans, conducted by the Experiment Station of the Utah Agricultural College, an average yield of 32 bushels to the acre was secured. At the present price of beans this would bring \$288. for each average acre. At the present food crisis demands a greater production of beans. Beans make a good crop to help meet the demand for food, they thrive on a variety of soils, do not require much labor, and are very nourishing as food.

Beans thrive best on a rich loam but will grow on any well drained soil. Excellent returns have been obtained on stony soils where sufficient water is available. A well-prepared seed bed is necessary to give the plants a good start.

Very good results have been obtained with the Navy, Mexican Pinto, and Tepary beans. The seeds are usually planted from May 15 to early

DAISY FLY KILLER



placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or sent express prepaid for \$1

HAROLD SOMERS, 150 DeKalb Avenue, Brooklyn, N.Y.

June, 1 inch deep in moist soil with the beans 3 inches apart in rows 24 to 36 inches apart. Some prefer to plant in hills 12 inches apart. From 30 to 60 pounds of seed are required to the acre, the quantity depending on the size of the beans.

Cultivation should be performed as often as necessary during the growing season to loosen the soil, save moisture, or kill weeds. Thorough cultivation before planting with a spike-tooth or arake materially reduces the hand labor during the summer. Ordinarily an irrigation every ten days during the middle of the summer is sufficient. If water is supplied late in the summer the seeds will not ripen before frost. When the plants are nearly mature they are pulled by hand in small fields and placed in piles to dry. Bean harvesters are used on larger areas. The beans are threshed with special bean threshers or by flail if a thresher is not available.

If you have an unpleasant duty to perform, do it quickly and it is off your mind.

The Germinating Power of Sugar Beet Seed

Reuben Hansen.

Utah being one of the foremost sugar beet producing centers, should be intensely interested in the production of high class sugar beet seed. By high class seed is meant that seed which has the greatest vitality, or germinating power, and from which come beets of highest sugar content. Seed that fulfill these conditions best is home grown seed.

In the past most of the seed used within the state has been produced in Europe, principally Germany, Russia, Austria Hungary, and France. These countries are not likely to export their best seed, since the governments try to keep the first class products for home use. The second and third class seed is often sold to the United States and other countries. Not only do we get an inferior seed sold to us, but the ocean voyage and changed climatic conditions, sometimes impairs the vitality of the seed. This injurious effect would not be felt with home grown seed, which has also become a climated and is, therefore, better adapted to local conditions.

In recent years pedigree sugar beet seed has been produced in small amounts, in the States of New York, Michigan, South Dakota, Illinois, Colorado, Utah and Washington. The small amount of work that has been done on the testing of these seeds shows them to be equal and in some instances far superior in germinating power to the foreign seed.

It would no doubt be of interest to the reader to know the influence of size and weight on the germinating power of sugar beet seed. Some testing work to determine the effect of the size and weight of home grown seed on its germinating power, has recently been done at the Utah Experiment Station.

The seeds were sorted into lots of 500 each according to size and weight. In the following table is shown the results of the test.

When the seeds had finished germinating, which was ten days after they were placed in the germinator,

the seed that had sprouted and the number of sprouts were counted.

Size of Seeds	Per Cent of Sprouts	
	Weight of Germinating Seeds	in 500
1-4 inch	22.7 grams	97 1427
1-5 to 1-4 inch	15.1 grams	95 1231
1-6 to 1-5 inch	10.7 grams	93 918
1-7 to 1-6 inch	8.2 grams	85 715
1-8 to 1-7 inch	4.7 grams	65 461

As will be seen by the above table the germinating power of the seed varied according to the size of the boll, or in other words, the larger the seed the greater the number viable in the 500 tested.

The experiment also shows that the larger seed produced a greater number of sprouts per seed. From one to seven sprouts grew from each seed, but the most common number was from one to three and the average number two.

From the foregoing results we may conclude that it is best to plant only the largest and preferably home grown seed, as these have the highest vitality. Which goes to insure a good stand from a minimum number of seed. But there is another question to be considered aside from the size of the seed. The number that will germinate per pound may be of as great importance as the percentage viable. There would no doubt be more than enough extra small seed that would germinate in a pound to make up for the greater vitality of the larger seed.

It is well to keep in mind that it is not the number of seeds germinating per pound that is of first importance, but the vigor of the plants, which come from the seeds used. The plants of the larger seed have much more vigor than the plants of the smaller ones. Therefore it is much better to plant the larger seed, which give greater vigor to the plants and which finally result in a greater yield.

ADVICE FOR CARE OF BABY.

Baby will be well and happy if he—
Has the right food;
Has a bath every day;
Is kept dry and clean;
Has his meals served on time;
Sleeps alone in a quiet, cool place;
Breathes fresh air day and night;
Is given cool, pure water to drink;
Is dressed according to the weather;
Is protected from flies and mosquitoes;
Is kept away from sick folks and crowds;
Does not have to be shown off for visitors;
Is not kissed on the mouth, even by his mother.

Baby will be unhappy and cross if he—
Is given a pacifier;
Is allowed to go thirsty;
Is taken up whenever he cries;
Is fed at the family table;
Is kept up late;
Is not kept dry and clean;
Is bounced up and down;
Is taken to the movies;
Is dosed with medicine;
Is teased and made to show off;
Is bothered by flies and mosquitoes;
Is not a fresh-air baby.

It is easier to keep a baby well than to cure him when he is sick.—
Reclamation Record.

No farmer who owns his farm should delay the erection of a shed or building large enough to store all the farm implements, and he should further make it a point to teach the boys on the farm, and the hired help as well, to bring in all tools when no longer needed in the field.

High Prices Will Continue during next year.

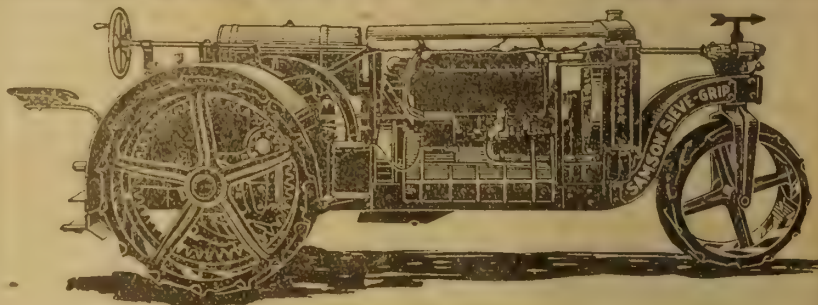
It will be to your interest to produce the biggest crops possible, both in field and garden. Our catalogue tells all about Vogeler's Purity Seeds.

SEND FOR A FREE COPY

Vogeler Seed Co.

SALT LAKE CITY, UTAH

SAMPSON SIEVE GRIP TRACTOR



This tractor delivers 12 horse power at the draw bar 25 horse power at the belt, burns kerosene or distillate, pulls three moldboard plows eight to ten inches deep at two and one-half miles per hour averaging one acre per hour on a fuel consumption of two and one-half to three gallons of fuel per acre plowed. Weight 5700 lbs. Price \$1,450.00 delivered on cars at Salt Lake. Tractors on hand for immediate delivery.

UTAH IMPLEMENT-VEHICLE COMPANY
SALT LAKE CITY

Hogs Need Protein

A lot of protein is necessary to produce healthy, firm hogs. The most economical way of securing the right amount is to feed our

HIGH PROTEIN TANKAGE

along with your regular hog feed. Try a few hundred pounds then recommend it to your neighbor, so that he too, can have healthy hogs. All good dealers.

OGDEN PACKING AND
PROVISION CO.

Ogden, Salt Lake and Price, Utah.

Don't waste your life in doubts and fears. Spend yourself on the work before you, well assured that the right performance of this hour's duties will be the best preparation for the hours or ages that follow it.

WORTH TRYING

The small boy stood at the garden gate and howled and howled and howled.

A passing old lady paused beside him.

"What's the matter, little man?" she asked in a kindly voice.

"O-o-oh!" wailed the youngster. "Pa and ma won't take me to the pictures tonight!"

"But don't make such a noise!" said the dame admonishingly. "Do they ever take you when you cry like that?"

"S-sometimes they do, an'-an'- sometimes they d-d-don't!" bellowed the boy. "But it ain't no trouble to yell!"—Answers.



"The Tank that Lasts a Lifetime"

A FULL STOCK OF STORAGE
AND STOCK WATERING
TANKS CARRIED IN
STOCK BY

GREEN MACHINERY &
MANUFACTURING CO.

Machinery Merchants & Manufacturers
American Building, 338 South Main St.
SALT LAKE CITY, UTAH

DRY FARMERS—HERE'S A CALL TO SERVICE

By J. W. Paxman.

In the message of Secretary Houston of the United States department of agriculture, comes an appeal for national agricultural preparedness through the mobilization of the country's agricultural resources. So weighty and so full of import is this call that it is without a parallel in the annals of history and which, if given a proper response, will do more to preserve the strength of the nation through its perilous period than any other movement that could be launched. The impending peril and a threatened shortage of crops make it obligatory upon the people to use care, prudence and economy in the production and conservation of foodstuffs for man and feeds for our domestic animals. As farmers, we must look at the situation seriously, thoughtfully and sense the gravity of our duty in the matter, and with a strong purpose hold to the plow and work industriously and wisely to serve the cause of our beloved country and humanity.

Fellow dry farmers: What can we do to give the best service at this time? There are four big things we can do to give immediate and future results.

First—Plow all unbroken and brush lands we can, and plant to corn and potatoes. This should be done immediately—the earlier the better. Remove the brush as thoroughly as possible. (Read article in recent number of the Utah Farmers on clearing brush lands.) Plow and harrow, remove all roots and rubbish and put the ground on a level and well-cultivated condition. This work and preparation should be done by May 1st to 15th, according to local conditions.

Second—In localities where the precipitation is above 15 inches, or where an unusual amount of moisture has fallen during the past fall and winter the lands can and should be planted to cereal crops, such as wheat, barley, and oats. Such planting should be done as early as possible. Beans, corn, potatoes and sudan grass can be planted on lands plowed later. The Cache Valley district and north Box Elder county, in particular, should make this a stem count. Since prices will undoubtedly remain high for all grains and feeds we can risk the spring planting of grains in such localities and go to winter wheat this fall. Districts with abundant moisture can

make a big showing by following this method.

Third—In localities where the rainfall is less than 15 inches, unless a very unfavorable condition exists, the fallow should be utilized with a cultivated crop. Beans of a good variety, preferably the Tepary or the Mexican pinto, should receive a large planting on account of their food value and the high price they will command. Corn and potatoes also can be planted on such lands without materially disqualifying them for planting to winter wheat in the fall.

Fourth—See that all fallow lands cropped to corn, potatoes, beans, etc., are cultivated freely and kept clean of weeds. Also that all fallow lands with no crops are plowed and cultivated in due season and kept entirely free from weeds, so that these lands may produce in their strength next year.

In the Cedar valley, Iron county, the high and flood waters may be applied to the lands and conserved by methods of cultivation. Almost any kind of an annual crop can be made safe under this method and such opportunity should be utilized and the waters made to do efficient duty. The seed question is rather a serious one, and farmers should do all they can to locate good seed and report at once. Information on the availability of seeds will be published from time to time. Other articles giving instructions on planting and care of crops will shortly follow.

My brother farmers: Let us produce every pound of farm products it is possible to do. Let us be the able captains of our own farms and make them serve us and our country's cause to the very utmost. Such service will redound to our personal blessing and contribute very materially to the nation's needs. The supreme hour is upon us. Let us strike and strike for a glorious victory.

SUGAR SHOWS LEAST ADVANCE IN PRICE

According to the figures compiled by the United States department of labor, out of seven food products, the average cost of which has increased less than 10 per cent, sugar showed the smallest advance in price. The department's average price of sugar per pound in February, 1916, is placed at 8 cents, and for February of the present year 8.1 cents, an increase of one-tenth of a cent per pound.

As compared with other food products selected for illustration, the following table given in the report clearly shows how little sugar has contributed to the high cost of living compared with eight other food products, the prices of which show the least increase of all commodities which are now helping to swell the average family food bill:

	Aver. Price Feb., 1916.	Per Pound Feb., 1917.
Sirloin steak.....	27.3	28.7
Bacon	28.8	30.7
Prunes	13.4	14.1
Bread	6.5	7.1
Milk	9.1	10.1
Sugar	8.0	8.1
Coffee	29.9	29.9
Tea	54.6	54.6

It is interesting to note that the department shows that onions showed a 77 per cent increase, potatoes 30 per cent, and that other articles, such as lard, butter, cheese, flour, cornmeal and navy beans have jumped to abnormal levels.

PLANT CORN

The most effective way to remedy the probable shortage in the wheat crop is to plant corn, says the United States Department of Agriculture.

Ordinarily the quantity of corn produced in the United States is from three to four times the quantity of wheat, but only a very small portion of the crop—from 5 to 10 per cent—has been used for human food. This amount may be estimated in normal times at about 200,000,000 bushels a year. Not over 5 per cent has been exported in peace times. A relatively slight increase in the corn acreage, therefore, will place many millions of bushels more of human food at the dis-

"Rock-Bottom" Truck Economy

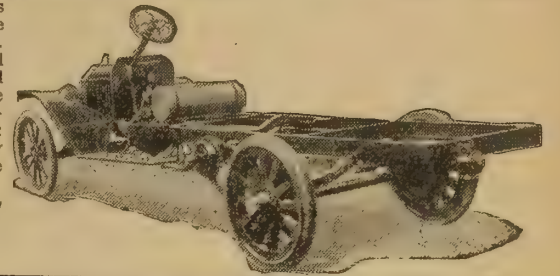
Your own "figures" will quickly prove this greatest truck proposition on the market. Start with the celebrated Ford Car—unique for value and efficiency—attach the TRUCKFORD, and a body to suit your requirements, and you have an unbeatable 1-Ton Truck for service under any conditions.

**Not only lowest First Cost, but
also Lowest Depreciation Cost.**

Truckford
One-Ton \$350

Absolutely no alterations of Ford chassis. Anyone can bolt on in two hours. Standard Tread, front and rear: Chain Drive and gear reduction to give greatest power with lowest gas consumption: Timken Bearings: Every feature appealing to the discriminating buyer.

The TRUCKFORD Agency
Logan, Utah.
Distributor for
Utah and Idaho.



13,500 Acres State Lands In Idaho

Special Excursion Rates via Oregon Short Line

To be sold at Public Auction,
at,

Rupert, Idaho, May 21st.

Burley, Idaho, May 23rd.

Twin Falls, Idaho, May 25th.

Details as to appraised valuations, locations, water costs, etc., can be ascertained at point of sale or may be secured in advance by writing, I. A. Smoot, State Land Commissioner, Boise, Idaho.

See Agents for
Details.

D. S. Spencer,
General Passenger Agent,
Oregon Short Line R. R. Co.,
Salt Lake City, Utah.

VICO
More
Miles to
the Gallon
MOTOR OIL

At one time you may have treated the matter of lubrication lightly, but, in the face of motor troubles, what are you to do? You know what you should have done. The correct consistency of VICO MOTOR OIL will help you solve your problems. Refined to perfectly lubricate all cars in this climate.

Utah Oil Refining Co.

Refiners

Salt Lake City

Utah.



**EVERY
DROP
COUNTS**

posal of the world without interfering in any way with the feed needed for the support of live stock.

In the past, with an abundance of grain of other kinds, corn has not been in great demand for human consumption. But with other grains no longer abundant, circumstances will compel more general recognition of the value of corn as human food. The

Department is urging strongly the wider use of corn in the diet. It is the best substitute for wheat that we have and can be utilized in breads, mushes and a variety of other ways. We should make every effort to avail ourselves of it.

"Plant corn," this should be the motto of every farmer in a section suited to the crop.

LIVE STOCK

BREED YOUR SOWS NOW

All gilts and sows should be bred to bring fall litters.

Every breedable sow should be bred to bring a fall litter. It is important that all sows be used to increase the food supply and no sow should be carried over the summer unbred. Fall litters under common-sense management are profitable. The pigs should come in early fall—September and October—so that they may be weaned and have attained sufficient growth to shift for themselves before cold weather arrives. The earlier the pigs come in the fall the cheaper their growth will be made on available pastures and the stronger they will be to withstand the winter. The period of gestation for a sow is approximately 112 days, so that a sow bred on May 15 would farrow about September 5. This means the sows must be bred for fall litters during the months of May and June.

All sows should be bred. Scruples over breeding immature sows should be forgotten. While in normal times most hog raisers do not breed the gilts earlier than eight months of age, sows will breed as early as five to six months of age. There are thousands of young gilts farrowed last fall and winter which will take the boar and should be bred this spring. By breeding them this spring the feed given them through the summer will have been more completely devoted toward food production. It will help to produce a greater meat supply and a supply ready for market six months earlier than if they were not bred until fall. Breeding such young gilts will have no bad effects on the farm herd. Results at the Missouri Experiment Station show that the young pregnant sow continues to grow under proper feeding and that the size of the litter is not appreciably reduced. Suckling the pigs retards the growth of the young sow, but this permanent retardation of growth is small and of minor importance when the sow will produce a good litter of pigs.

Larger litters are obtained by flushing sows before breeding. This is done by feeding in such a way as to have the sows putting on weight at the time of breeding. The suckling sow should have her pigs weaned shortly before being bred. Her udder should be dried up by a reduction of feed. She should then be flushed and in a few days can usually be bred. After breeding, the sow should be watched to be sure she has caught. If she has not, twenty-one days later she will again show indications of heat and can again be bred.

A good pure-bred boar should be used, preferably of the same breed

as the sow or of that breed which predominates in the sow. This will result in a more uniform lot of pigs and an upgrading of the breeding herd. For the young gilts and small sows a breeding crate may be necessary if the boar be large.

The pregnant sow should be fed a ration consisting of bone-making and muscle-making feeds. She should gain weight but not be made fat. Pasture with a small grain ration proves excellent for carrying the pregnant sow until she is almost ready to farrow.

CARE OF THE LITTER

At the age of from three to four days, catch each pig and with the aid of a pair of pinchers remove the black teeth. In removing these teeth, be sure to break them off. Never pull them as this would leave a wound open to infection. The above precaution will materially reduce the canker sore mouth trouble so common among your pigs.

Do not allow your little pigs to become excessively fat. In the event they begin to show excessive fatness around the throat, reduce the dam's feed materially. If this condition is not checked, a disease commonly known as "Thumps" will result. This disease is very difficult to cure, though it is easily prevented. Lack of sufficient exercise will oftentimes result in Thumps. Provide an opening leading from the dam's quarters which will allow the pigs to escape at any time. If the weather is such that the little pigs cannot leave the quarters, either of the following methods have proved very effective: Keep them moving in the pen by the aid of the whip, from a quarter to a half of an hour each day until normal conditions are restored.

The most profitable pork production is possible only when the individuals are making maximum growth from the time they are farrowed until they are put on the market. Thus we do not want to check or stop in the growth, for experiments have shown that all such checks are made at the expense of the producer. The weaning period is perhaps the most important period from this standpoint. When the pigs are two weeks old they should be taught to eat. Provide a trough and feed floor out of reach of the dam but accessible at all times for the little pigs. Keep skim milk in the trough most of the time if possible. Sprinkle oats on the feeding floor. If you have no oats, cracked wheat or shorts may be used. It will be found that the pigs will soon be regular visitors to the feeding quarters, and at the time of weaning, eight weeks, the pigs will be taking a full ration. By following this system, the usual check at weaning will be prevented.

At seven weeks of age, all males that are not pure bred and eligible to registry should be castrated. This operation is very simple and with sanitary precautions, the loss should be very small.—E. J. Fjeldsted.

POULTRY

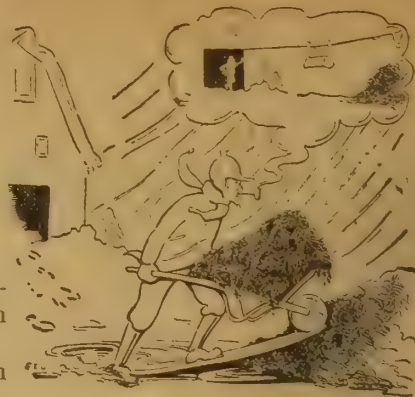
PRODUCE INFERTILE EGGS

Save the spoilage that comes from letting the male bird run with the flock.

The farmers of the United States lose each year large sums because of improper methods of producing and handling eggs. One-third at least of this loss is easily preventable. It is due to the partial hatching of fertile eggs.

The eggs laid by a hen may be either fertile or infertile, depending on whether or not the male bird has been allowed to run with the female. A fertile egg is one in which the germ has been fertilized by the male bird. Except for this process of fertilization, the male bird has no influence upon

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Put aside the wheelbarrow and install a Louden Litter Carrier.

You can keep your barn cleaner, your stock healthier, yourself and help happier, and get through with this time-killing chore in half the time. A Louden Litter Carrier changes barn cleaning from man's drudgery to child's play. The powerful worm hoisting gear enables a boy to raise and lower the loaded carrier to any height desired. A pound pull on the chain lifts 40 in the box

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THE Martin WAY



ONE OF A THOUSAND

"I never was a great friend of the shovel and since I have used the MARTIN, the shovel and I have entirely dissolved partnership." F. H. Lytle, Pioche, Nev.

DITCHES!

—Make the NEW and clean the OLD with the MARTIN Ditcher, Dyker and Grader. It makes or cleans irrigation or drain ditches up to 4 feet deep, any width. Builds dykes; grades roads.

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is guaranteed to do more and better work than 50 men with shovels. Works in sand, clay, gumbo or rocks—wet or dry; on side hill or on level ground. Made in 2, 4 and 6-horse sizes.

All Steel—Reversible
Adjustable for wide or narrow cut. No wheels, levers or breakable parts. Cost low. Up-keep nothing.

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Write us.

the eggs which the hens lay. Egg production is equally great in flocks from which roosters are excluded.

A fertile egg does not keep as well as an infertile one because the fertilized germ responds more readily to high temperatures than the unfertilized one. It is impossible to hatch an infertile egg or to cause a blood ring to form in one. Such eggs are much more likely to reach the table in good condition and there is much less spoilage in shipments composed entirely of them than in mixed shipments of fertile and infertile eggs.

After the hatching season, therefore, the male birds should be cooked, sold or confined. In approximately 14 days after this all the eggs laid by the hens will be infertile. These can be marketed much more successfully under the adverse conditions that frequently prevail in the hot summer months.

Rules for Handling Eggs on the Farm.

Heat is the great enemy of eggs, both fertile and infertile. Farmers are urged to follow these simple rules, which cost nothing but time and thought and will add dollars to

YOU CAN'T CUT OUT A Bog Spavin or Thoroughpin
but you can clean them off promptly with

ABSORBINE
TRADE MARK—REG. U. S. PAT. OFF.

and you work the horse same time. Does not blister or remove the hair. \$2.00 per bottle, delivered. Will tell you more if you write. Book 4 M free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Varicose Veins, Ruptured Muscles or Ligaments, Enlarged Glands, Wens, Cysts. Allays pain quickly. Price \$1 and \$2 a bottle at druggists or delivered. Made in the U. S. A. by W. F. YOUNG, P.O.F., 142 Temple St., Springfield, Mass.

the poultry yard returns.

1. Keep the nests clean; provide one nest for every four hens.
2. Gather the eggs twice daily.
3. Keep the eggs in a cool, dry room or cellar.
4. Market the eggs at least twice a week.
5. Sell, kill, or confine all male birds as soon as the hatching season is over.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

POULTRY

PRODUCE AS MANY
CHICKENS POSSIBLE
Byron Alder, U. A. C.

Last summer and fall when the price of wheat and other grains began to climb to points unheard of in the last few years, apparent economy was practiced in many sections by the sale of most or all of the chickens. The excuse was "We cannot afford to feed \$1.50 wheat to chickens." That would be true at the price of eggs in past years. A good close culling of old, poorly developed, or diseased fowls would have been a good thing, but the sale of young, vigorous, well-developed hens or pullets was, to say the least, poor economy. Before the winter had passed many farmers, who had sold their hens were buying eggs at a very high price from poultry raising farmers of other sections. These eggs were produced from grain bought at high prices, shipped many miles by freight, and the eggs returned by express to the supposed economist. The present high price of eggs is bringing home to some of us the results of our premature judgment, but we have by no means seen the final results of such a condition.

Our only chance to help out the present poultry condition is to hatch and raise as many chickens as possible. Weed out any that show signs of lack of vigor and vitality. Prevent the common enormous loss of brooder chicks by proper feeding, good care, and above all strict sanitation in and around the brooder. Sell, kill, or confine the male as soon as the hatching season is over and produce infertile eggs, thus preventing a large part of the enormous loss of bad eggs of past seasons. A little care, good feed and methods of feeding, proper housing of good, vigorous hens or pullets will give good returns even under present conditions.

The normal incubation is drawing near the end, but it may be necessary and profitable to continue hatching this year until late in the summer. The most urgent need right at present is in the care of brooder chicks. It is

estimated that ordinarily only about 50 to 60 per cent of the chicks hatched are raised to maturity and of these one-half are cockerels. Every effort should be exerted to prevent this loss. Some of the most common causes are overheating during incubation or brooding, which interferes with the natural absorption of the yolk, causing diarrhoea trouble when the chicks are about 7 or 12 days old. Avoid over-heating, chilling, over-crowding, moist or unsanitary brooders or surroundings. Plenty of fresh air without draught, and light, clean brooders are some of the first essentials to success.

Perhaps the greatest loss comes from improper food or poor methods of feeding. Chicks should not be given any food at all until they are about 48 to 60 hours old, then the first food should be highly nutritious and easily seen. All the skim milk, sweet or sour, the chicks will drink it very good from the first and will prevent much loss. Avoid sloppy or wet feed during 1st 4 weeks.

"Oat meal, bran, a little chopped wheat, or bone grit with dry alfalfa-leaves are excellent for the first few weeks. Where skim milk is not available, hard boiled eggs or meat scraps with a little bone meal will prevent the common trouble of leg weakness in later weeks. This is due to the lack of bone building material in the rations.

Any musty or sour feed will likely cause diarrhoea. Corn which has heated in sack or bin or with a musty odor should never be used for chick feeding. Allowing the chicks to scratch in musty chaff may also cause trouble. A very little salt, fresh water, grit and exercise are very necessary.

COOP THE MOTHER HEN

Loss of chicks by exposure largely prevented by confining the hen. It is not good poultry management to allow the mother hen to range unrestricted with her chicks. With such freedom the hen frequently takes her brood

through wet grass and, as a result, some are chilled and die, especially the weaker ones which are likely to be left behind. The loss of young chicks which follows such a practice is large and mainly preventable. Furthermore, the food which a brood allowed to range with the hen obtains goes very largely to keep up the heat of the body and the chicks do not make as good growth as they otherwise would.

Chick losses of this nature can be largely prevented by shutting the hen in a coop. Any style of coop which is dry, ventilated, and can be closed at night to protect the brood against cats, rats, and other animals, and which, while confining the hen, will allow the chicks to pass in and out freely after they are a few days old, will be satisfactory. The hen should be confined until the chicks are weaned, though a small yard may be attached to the coop. If desired, to allow the hens to exercise, the fence can be raised from the ground far enough to allow the chicks to go in or out, but not high enough for the hen to escape. By using a coop the chicks can find shelter and warmth under the hen at any time and the weaklings, after a few days, may develop into strong, healthy chicks.

Where chicks are raised with hens, they are likely to become infested with lice. If the lice get very numerous they greatly retard the chicks' growth and may even cause their death. The hen should be powdered thoroughly with some good insect powder before she is put in the coop with the chicks, and at intervals of several days or a week thereafter. The baby chicks should be examined for lice, particularly on the head, under the wings and about the vent. If any are found, a little grease, such as lard, should be rubbed on in those places. Apply grease moderately, as too much will injure the chicks. The chicks should be examined frequently and the treatment repeated if lice are found on them.

ONLY FERTILE EGGS WILL HATCH

But Even Fertile Eggs Should Be Well Selected and Carefully Cared For.

Byron Alder, U. A. C.

Farmers desiring good hatches from their incubators or sitting hens this spring will do well to observe the following suggestions on egg selection:

Successful incubation depends first; upon securing eggs from strong vigorous stock, well mated, housed, and fed under conditions that make for health and vigor; second, upon the conditions under which the eggs are held and upon their age, and finally, on the incubation. The breeding stock should not be overfat. Free range conditions are best. If kept in closed runs a varied supply of grains and animal food (milk, meat scraps, insects, etc.) should be given, with green food, grit, and fresh water always available to the fowls. The house should be kept clean, dry, and free from mites and other pests. All weak or inferior fowls should be culled out of the breeding pens.

During cold weather the eggs should be gathered twice daily and kept in a place where they will not be chilled or overheated, preferably at a temperature between 50 degrees and 65 degrees F. The eggs should not be stored in a damp mouldy cellar or around decaying fruit or vegetables. Use only good sized eggs of uniform shape and color. Small, long, abnormal or poorly shaped eggs should be discarded. The hatchability of the eggs deteriorates very rapidly after they are ten or twelve days old. Do not try to hatch brown shelled and white shelled eggs in the same incubator as the former usually take a little longer to hatch. Never add fresh eggs to a lot that has started to incubate. Strong vigorous chicks cannot be hatched by hens or incubators from weak germs or from eggs that are old or have not had the proper care.



Supplies What Other Foods Lack

Some people will give just one kind of feed to their cows and then wonder why they do not get good returns. The trouble is, one single food does not contain all the essential elements to promote health and a liberal milk production, unless it is a scientifically balanced combination such as



Stock Feed

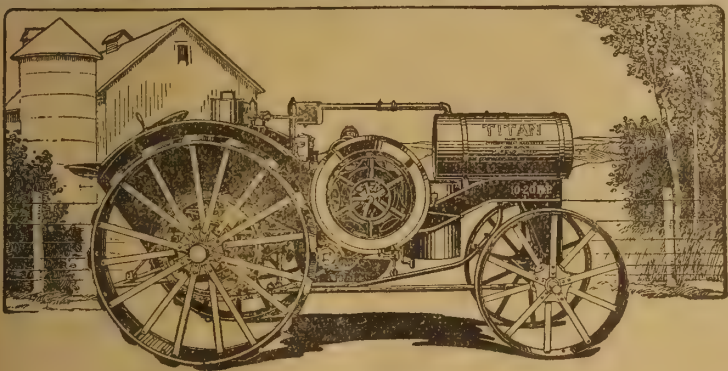
Stockmen everywhere in the west praise the results obtained, as well as the economy of Sunripe stock feed.

A highly nutritious compound of oats, barley, cotton seed meal and sugar beet molasses.

FREE—Write for copy of booklet "Feeding for Results." Contains a lot of valuable data of interest to stockmen.

Utah Cereal Food Co.

Ogden, Utah



The Final Answer

To the Tractor Fuel Question

WE believe that a farmer who buys a kerosene tractor costing hundreds of dollars is entitled to get what he pays for.

We know that Titan tractors are real kerosene tractors. When you buy a Titan tractor you are safe. You have the written guarantee of a responsible Company that your tractor will do good serviceable work, using common coal oil as fuel at all loads. That is the final answer to the tractor fuel question.

Titan tractors are now built in three sizes, 10-20-H. P., the 3-plow outfit; 15-30-H. P., for 4 and 5 plows; and 30-60-H. P. for the heaviest work of the largest farms. All operate on kerosene.

The 10-20-H. P. size is a two-speed tractor, 1.85 and 2.50 miles per hour, with a smooth running twin-cylinder engine, slow speed, mechanically oiled, starting and running on magneto. It can be used for any field work you would expect nine or ten horses to do, and it will run any machine that takes up to 20-H. P. at the belt.

If you place your order soon you can have a guaranteed Titan tractor for the heavy spring work. Drop us a line so we can send you full information at once. Don't wait. Write now.

International Harvester Company of America

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SALT LAKE CITY

Champion Deering McCormick Milwaukee Osborne Plano

Farm Manures

E. B. Hitchcock.

What are you doing with your farm manure? This is a question that is very appropriate at this time owing to the fact that it is one of the important factors in our great problem of increased production. There was never a time in which we have needed a means of increased fertility more than we need it at present.

The following table shows very clearly the amount of plant-food material added to the soil in various applications of farm manure:

Amount of Plant Food in Stable Manure				
	5 tons	10 tons	15 tons	20 tons
Nitrogen	50 lbs.	100 lbs.	150 lbs.	200 lbs.
Phosphoric acid	25 lbs.	50 lbs.	75 lbs.	100 lbs.
Potash	50 lbs.	100 lbs.	150 lbs.	200 lbs.

It is well to compare the plant food material in your farm manure with that of commercial fertilizers.

Five tons of good farm manure are equal to the
Nitrogen contained in 300 pounds Sodium Nitrate.
Phosphorous contained in 200 pounds Acid Phosphate.
Potassium contained in 100 pounds Potassium Chloride.

However, do not let these data on the amount of plant food material in the manure mislead you, for the amount available to the plant, during the first season of application, varies from one-third to one-half of the total plant-food found in the manure. Five tons per acre is considered a light application, ten tons a moderate application, and twenty tons a heavy application. Generally speaking the most economical results are obtained by making smaller applications at frequent intervals.

If you have a light porous soil it is well to turn the manure under from six to eight inches. In the case of

To Buy

a heavy clay soil a depth of four inches will give better results. The reason for varying the depths at which you shall turn under your manure in various soils is this:—the decomposing bacteria require a certain amount of oxygen to perform their work and in the case of a heavy clay soil, if the manure is covered

to deeply, you will not have the necessary aeration.

A Texas bank placed 326 pigs among pig-club members in the county in which the bank was located. As a result of the friends made in this way many new patrons of the bank were secured, who brought in over \$75,000 in deposits.

Clover or alfalfa hay, and some grain fed with roots, will bring the sheep through the winter in a thrifty and profitable condition. This method of feeding will insure plenty of milk at lambing time.

OPPORTUNITIES IN FARM LANDS

We have at Elberta, Utah, 50 acres of the finest farm and garden land in the West. It is a very suitable place for a man who wants a small farm at a reasonable price. Well adapted to raising any of the farm products, garden truck, alfalfa and beets. It is located on a railroad giving excellent shipping facilities, close to two mining camps, affording a fine market for garden vegetables, and is also near good schools. Just the kind of a place you will want. Prior water right at \$1.00 per acre if used. See us about this place and let us give you further details.

Another opportunity for the right party at Elberta, Utah, is a 50 acre farm, suitable for the growing of alfalfa, fruit, beets, grain, garden truck or any other farm products. The best kind of soil, with good water right at a reasonable rate. This property adjoins a good school and is located on a railroad. Will take \$3,750 for this place, with suitable terms for payment. This is a real buy for the man that wants a small farm at a good price.

For \$75.00 an acre you can buy 50 acres of Elberta's fertile land, with prior water right at \$1.00 an acre. What do you think of this buy. If you are looking for a small farm at a low price, investigate this further. We will be glad to furnish you with more information.

We are dealers in farm lands. Write us your wants.

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FARMS

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

FOR SALE

640 acres with 168 acres wheat, 50 acres alfalfa, well, fence, 6 horses, harnesses, implements, etc.

800 acres, 320 pasture, 235 acres in wheat and some horses, etc. Will sell part or all. Price and terms reasonable. For further information, write

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SALT LAKE CITY

INCOME PROPERTY FOR FARM

We have an excellent income city property which we wish to trade for an unincumbered farm. Submit us a proposition.

"THE SOUTH WILL WAG THE NORTH"

Do you know that one of Utah's wisest men has said "The South will wag the North?" We have some excellent listing of farms in Southern Utah. The soil is fertile. The water rights are good. Now is the time to buy when prices are low.

THIS FARM PAID \$2,250.00 LAST YEAR

50 acres having 35 acres in alfalfa and 15 in wheat. Primary water right. Excellent soil. Located near the flowing well district at Fillmore. \$2,000.00 will handle this bargain. Total price \$4,150.00.

WATER RIGHTS WITH NO MAINTENANCE CHARGES

The Deseret Irrigation Company in Millard County has not levied an assessment for upkeep of ditches and canals for 10 years. Its income pays its operating expenses. The water rights are primary. We have a few good farms listed for sale under the Deseret Irrigating Company's system. The price is right. It is \$50.00 per acre. It will not last long as the largest sugar beet factory in Utah is being built near these farms.

There is great activity in the flowing well district of Fillmore. The soil is productive and easy to work. The climate is not severe. We have a few bargains—it will pay you to investigate.

FARM FOR SALT LAKE HOME

2 1/4 acres irrigated by flowing well. 3/4 acre raspberries, 1/4 acre asparagus. Family orchard. Four room brick house with bath. Good wash house and outside cellar. Hedge, cement walks and lawn. Will consider \$2,000.00 Salt Lake home on east side as part payment. Total price \$4,400.00. This is an opportunity for some one and deserves your consideration.

FARMERS' SONS, ATTENTION!

Are you casting about looking for a new location where lands are cheap but good? We know of 280 acres of level sage brush land carrying a good water filing. You will need teams and equipment to clear the brush and prepare for seeding. This opportunity would not be afforded you if the owner, a professional man could look after the place himself. Last week he sold the adjoining 320, which is no better, for cash. \$2,000.00 will handle the property. Balance on easy terms. Price \$17.50 per acre. Can be made worth \$75.00 per acre.

WANT TO BUY A FARM?

WANT TO SELL A FARM?

SEE

ASHTON JENKINS COMPANY

"They Know"

47 Main Street,
Salt Lake City.

To Sell

RELIABLE FARM BARGAINS.

\$450 per acre will buy one acre of first-class garden land. On the 5-cent car line, immediately adjoining the city on the south. This land can be had for a small payment down and a long time on the balance. If you are living in the city and want to get out in a suburban home, this will appeal to you.

40, 80, or 160 acres in southern Idaho. The soil in this tract is first-class and there are 4 acre-feet of water per acre, the maintenance on the water being very low. It is located on the Oregon Short Line railroad and the state highway passes through the tract. The price of this land ranges from \$60 to \$100 per acre and can be sold for 10 per cent of purchase price and ten years on the balance at 6 per cent interest on deferred payments. If you are interested in purchasing a farm, investigate this proposition. We will gladly mail you a folder giving full details about this property upon request.

700 acres of land in Cache valley which we consider to be some of the best soil in that district. We have purchased this under such conditions that we can resell at a very low price and on very easy payments, 10 per cent at time of purchase and ten years on the balance at 7 per cent interest. If you are looking for a farm, we would advise you to investigate this property before purchasing elsewhere.

We have recently come into possession of several of the choicest farms in the Bear River valley. We are now offering these farms at a price of from \$135 to \$200 per acre, depending upon the location and the improvements. This land is all under a high state of cultivation and is all under irrigation from the Bear River Valley canal. It can be had for a 10 per cent down payment and ten years on the balance at 7 per cent interest.

720-acre ranch in good district of Nevada. 300 acres under cultivation, all irrigated. Fine water from mountain streams, 8-room house, stable, sheds, blacksmith shop, etc. 45 head cows, 20 head horses, all necessary machinery and implements. Located four miles from railroad station. Forest reserve for pasturing cattle adjoins ranch. Good family orchard. Two miles to school. Price complete, \$30,000. Part cash, or will trade for Utah property. Good terms.

2 1/2 acres at Bountiful with 3-room house. Fine truck garden soil. Large strawberry patch. Flowing well. All fenced. Chicken coops, sheds, cemented cellar, etc. Total price only \$2100. Good terms.

SPECIAL NOTICE: If you don't see what you want in this list, come in or write and tell us what you are looking for. We can get it for you and save you money. We trade farms for city homes.

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"Land Merchants,"
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Phone—Wasatch 963

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This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

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Two imported registered Percheron Mares, also several Purebred Jersey Bull Calves from heavy producing imported Island Stock. Apply

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Hatching Eggs 20% Off.
A few White Leghorn Breeders at half January prices.

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GROWING OF BEETS IS BENEFIT TO YOUR FARM

Besides providing an absolutely cash crop, a certain market, the growing of sugar beets, the Utah and Idaho, also provides one of the best means of fertilization through crop rotation. Agricultural experts agree that root crops are essential in good farming—sugar beets provide the safest, surest, cash producing crops of its kind.

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WANTED to hear from owner of good farm for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

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Samples Free
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LEG BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

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S. C. Brown Leghorn eggs for hatching from bred to lay strain. Free range stock. Prices: 75c for 15; \$3.75 for 100 delivered. Fertility guaranteed.—D. Stratton R. D. 1, Box 207, Provo, Utah.

FOR SALE

Single Comb White Leghorn Hatching Eggs from bred to lay stock. Our thirteenth year Prices right.

MODEL POULTRY FARM
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YOUR OPPORTUNITY

200-290 Egg. Early Maturing, Winter Laying Leghorns. Anconas, Reds; W. Barred Rocks; W. Buff Wyandottes; Buff Orpingtons. \$3-\$10 yearly profit per hen. During May and June: Eggs half, chicks fourth off. Few pens all breeds, at bargain to make room. Guarantee you profit with feed high.

J. BEESON
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DUROC-JERSEY BOAR PIGS

that are registered and from the world's greatest families being grandsons of the \$5,000 DEFENDER and the \$2,000 ILLUSTRATOR. Spring pigs \$15.00 each and boars of serviceable age \$35.00 each, that are CHOICE.

Satisfaction or Your Money Back.
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Grow More Beans

(Continued from page 3)

manner about 950 kidney beans are required for a pound, making 55 pounds necessary for planting an acre. From these figures the quantity of seed necessary to plant an acre may be found.

Cultivation: Cultivation should begin when the plants are a few inches high and should be continued at intervals until they bloom. This is especially important soon after irrigations to save moisture and destroy weeds.

Irrigation: Water should be applied to the crop in furrows before wilting occurs. Over-irrigation, common in some bean districts, cannot be too strongly condemned. While good crops have been raised without irrigation, from one to three waterings will usually increase the yield, especially on sandy or stony soils. Large amounts of water or late irrigations retard ripening and increase the chance of damage by early frosts.

Harvesting and Threshing: When the pods are nearly mature, the plants are cut with a bean harvester

which leaves them in windrows. They are then put in small piles and after thorough drying are ready to be stacked or threshed. Many small fields are pulled by hand because a bean harvester is not available. They should not be left in the field many days as the seeds will shatter during dry weather or may be damaged by storms. If thoroughly dried, the plants may be stored and threshed later. A flail does satisfactory work if some soft material such as straw is placed under the beans to prevent breaking them. A disc harrow drawn by horses has also been recommended for threshing beans. For large quantities a bean thresher is quite necessary. Even with a thresher, part of the seeds will not be shelled if the pods are not entirely dry. A grain thresher with reduced cylinder speed and part of the concave teeth removed can be used, but this method often breaks a number of the seeds. A fanning mill is used to clean the beans. Hand picking is necessary if part of the beans are discolored or unripe.

Varieties: While not enough beans have been raised in Utah to definitely determine the varieties best adapted to different localities, the Tepary, Little Wonder Navy, Flageolet, Mexican Pinto, and several other varieties have been grown successfully.

Yield: The yield of beans varies according to the variety, the soil, the season, and the experience of the grower. The 4-year average of 10 best varieties grown on a Utah Experiment Farm was 1,920 pounds of beans to an acre. Farmers raising beans in North Logan, Utah, produce about 1,200 pounds on an acre of soil which contains too much gravel for growing such crops as sugar beets and grain. Better land in the same locality produces larger crops. In northern Idaho about 800 pounds to acre have been produced on dry-farm soils, the bean crop taking the place of the fallow after wheat.

Profit: The average wholesale price of beans on the San Francisco market has been about 5 cents a

pound since 1912. Even at this price a crop of beans on a dry farm should give a good return. It does not cost much more to grow the beans than to summer fallow the land and the succeeding crop is usually not materially affected. A yield of 1,800 pounds from an acre of good irrigated soil would be worth \$90 at 5 cents a pound or \$180 at 10 cents. Other important reasons for growing beans are the ease of storing this staple crop and its very high food value.

At least a few beans should be grown on many farms this summer and if they are successful, a much larger acreage should be planted next spring. If the beans are also planted in each garden this year it will insure a larger supply to feed our armies and for shipment to our allies. It is our duty to produce more staple foods.

The dairy cow must have a ration from which she can produce milk if you expect her to make a profitable return for the feed.

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Five Passenger Touring.....	\$1025
Three Passenger Roadster.....	\$1010
Willys-Knights	
Seven Passenger Four, Touring	\$1395
Seven Passenger Eight, Touring	\$1950

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OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XII; No. 42

LEHI AND SALT LAKE CITY, UTAH

MAY 26, 1917

RAISE MORE HOGS AND MAKE MORE MONEY

Utah Can Produce Hogs at as Low a Price as Any State

Don't sell any brood sows this year.

Breed now to get your September pigs.

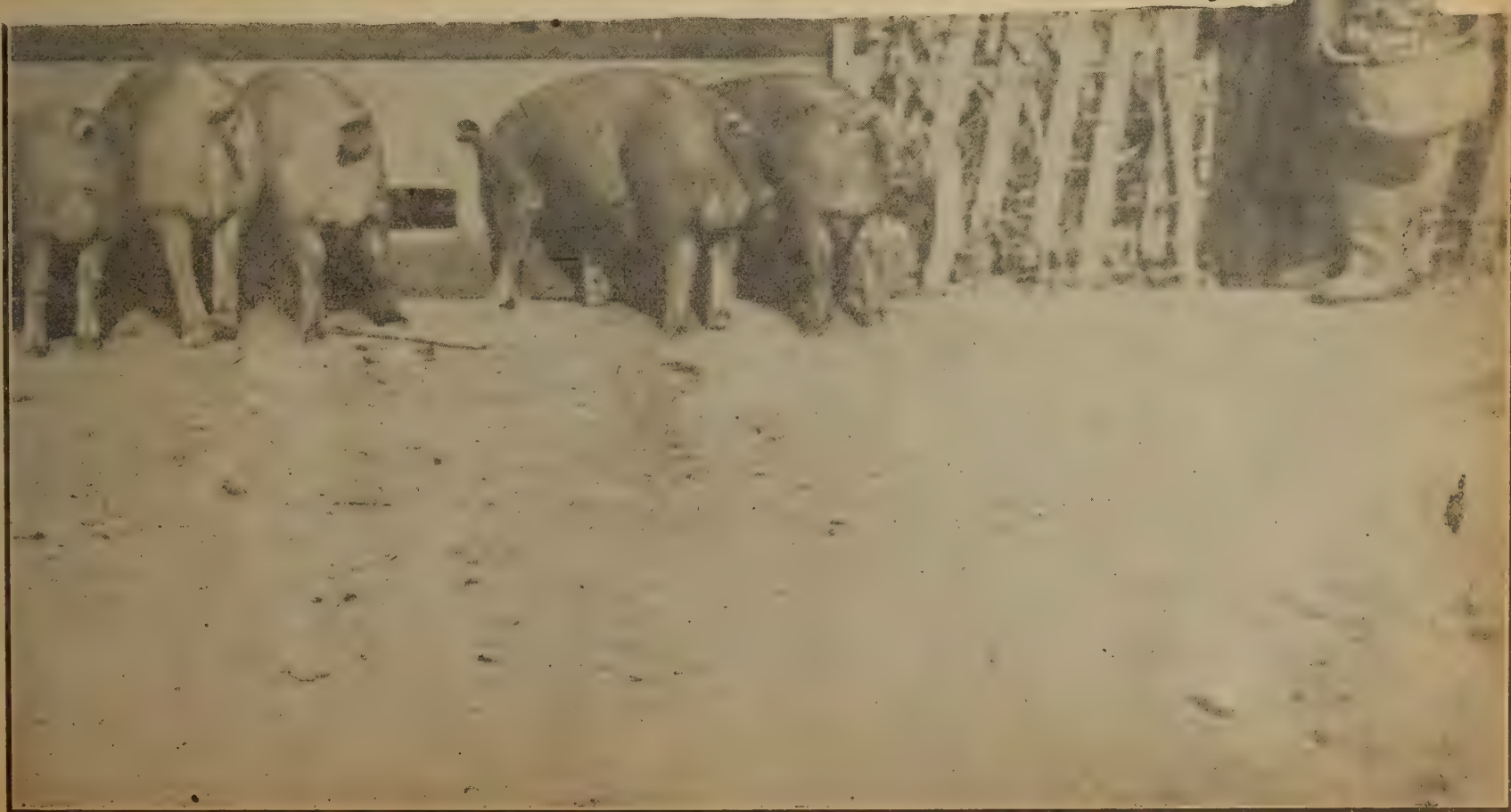
Pasture your hogs in alfalfa, feeding a little grain.

There is money in the hog business at present prices.

Keep only pure-bred boars and improve your herd.

Market your grain and alfalfa by feeding it to livestock.

Keep your hogs, raise more hogs and make more money.



Production and Thrift---What The Farmer Stands For

POULTRY

COOP THE MOTHER HEN

Loss of Chicks by Exposure Largely Prevented by Confining the Hen.

It is not good poultry management to allow the mother hen to range unrestricted with her chicks. With such freedom the hen frequently takes her brood through wet grass, and as a result some are chilled and die, especially the weaker ones, which are likely to be left behind. The loss of young chicks which follows such a practice is large and mainly preventable. Furthermore, the food which a brood allowed to range with the hen obtains goes largely to keep up the heat of the body and the chicks do not make as good growth as they otherwise would.

Chicks losses of this nature can be largely prevented by shutting the hen in a coop. Any style of coop which is dry, ventilated, and can be closed at night to protect the brood against cats, rats, and other animals, and which, while confining the hen, will allow the chicks to pass in and out freely after they are a few days old, will be satisfactory. The hen should be confined until the chicks are weaned, though a small yard may be attached to the coop, if desired, to allow the hen to exercise. The fence can be raised from the ground far enough to allow the chicks to go in or out, but not high enough for the hen to escape. By using a coop the chicks can find shelter and warmth under the hen at any time, and the weaklings after a few days may develop into strong, healthy chicks.

Where chicks are raised with hens, they are likely to become infested with lice. If the lice get very numerous, they greatly retard the chicks' growth and may even cause their death. The hen should be powdered thoroughly with some good insect powder before she is put in the coop with the chicks and at intervals of several days or a week thereafter. The baby chicks should be examined for lice, particularly on the head, under the wings, and about the vent. If any are found, a little grease, such as lard, should be rubbed on in those places. Apply grease moderately, as too much will injure the chicks. The chicks should be examined frequently and the treatment repeated if lice are found on them.

POULTRY MITES.

How to Free Poultry Houses—Crude Petroleum Sprays and Sanitary Measures Make Yards Habitable.

Lice by day and mites by night furnish the unhappy condition of poultry kept under insanitary surroundings. Treatments for lice are not effective for mites because the latter work only at night, making raids on the fowls from their hiding places in crevices of the roosts and cracks of the building. To destroy mites and keep the flock free of their depredations, insecticide sprays and a sanitary building are necessary.

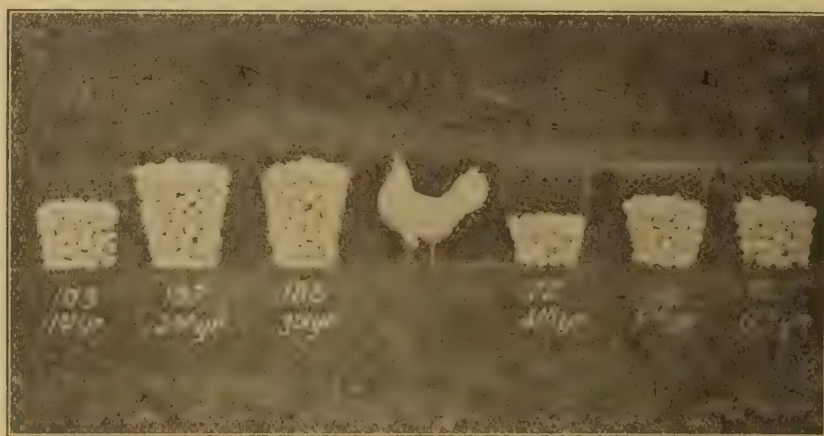
The presence of mites is indicated by small black and white specks on the roosts—the excrement of these insects. The first step is to get rid of the hiding places so far as possible. The roosts should be taken down and all unnecessary boards and boxes removed. In heavily infested houses the mites are to be found in all parts of the building, including the roof. Where they are less numerous, the infestations usually are confined to the roosts and nests and the walls immediately adjacent. For small coops a hand atomizer will suffice for applying insecticides as sprays, but for larger houses a bucket pump, knapsack sprayer, or barrel pump is desirable. A rather coarse spray should be applied from all angles and thoroughly driven into the cracks. The floor also should be treated, as many

mites fall to the floor when the roosts are being removed.

Of the several materials that have proved effective, one of the so-called wood-preserveds, consisting of certain coal-tar products, known as anthracene oil with zinc chlorid added, has given particularly good results. Its repelling power lasts for months. The cost is about \$1 a gallon, but twice the quantity may be obtained by reducing with equal parts of kerosene.

Crude petroleum is almost as effective, retains its killing power for several weeks, and in most localities is very cheap. It will spray better if thinned with one part of kerosene to four parts of crude oil.

Both of these materials often contain foreign particles which should be strained out before spraying is begun. It has been found that one thorough application of either of these materials will completely eradicate the mites from an infested chicken house, but ordinarily it is advisable to make a second application a month after the



By keeping records of all eggs from a large flock of hens the Utah Experiment Station has shown that the number of eggs a hen lays the first year does not indicate how many she will lay in the years following. This hen was not exceptional the first year but made good later.

first, and in some cases a third treatment is required. These subsequent applications may be made with a brush, using the materials pure and covering only the roosts, their supports, the walls adjoining, and the nests if they are infested. This method of application is effective for the first treatment also if the houses are heavily infested. Poultry should be kept out of the treated buildings until the material is well dried into the wood.

Used as a dip, crude petroleum will also destroy the small bite which causes scaly leg. In dipping for this mite the solution should not be allowed to reach the flesh above the infestation or to get on the feathers.

EGGS IN THE DIET.

Food Value, Relative Freedom from Waste, and Ease of Preparation Often May Offset High Prices.

Because of the peculiar food value of eggs, their relative freedom from waste, and the ease with which they may be prepared, their use as meat substitutes at least is often desirable, even when a consideration of their price alone would not so indicate. While this is true of eggs served as one of the principal dishes of a meal, it often is not true of eggs used in cakes, puddings, and other desserts along with meats. It is in the latter use of eggs that the housewife who wishes to economize can try especially to curtail consumption. A fact which makes this latter practice easier is that with the present availability of baking powders, corn starch, gelatin, etc., the use of eggs to impart lightness or to thicken liquids is not now as essential as it was in the past.

Food Elements in Eggs.

The principal food element furnished by eggs is protein, the nitrogenous tissuebuilding element whose presence in considerable proportions also gives

meats, fish, milk, cheese, etc., their special food value. Eggs, therefore, can be substituted in the diet for the later foods without materially altering the proportion of protein consumed. In addition to protein, eggs also furnish fat and a number of valuable mineral elements, including sulphur, phosphorus, iron, calcium, and magnesium, in an easily assimilable form, and are believed also to be rich in certain essential vitalizing elements called vitamins.

Like milk and unlike meats eggs do not contain substances convertible in the body into uric acid. Their shells constitute the only waste materials. Ninety-seven per cent of the portion eaten—a high proportion compared to other foods—is digested. No extended cooking is necessary for eggs, and there is therefore a saving of time, labor, and fuel in their preparation when they are compared with many other foods. For all these reasons eggs deserve an important place in the diet for use at times in place of other foods rich in protein, provided egg prices are not so high as to outweigh the other considerations.

Wholesomeness of Eggs.

Though wholesome when fresh and

tageous to preserve their own eggs in the home, purchasing them when the supply is abundant, and packing them in a solution of waterglass or lime water, or covering them with paraffin or varnish. Such eggs can be kept in good condition for a number of months. For current use fresh eggs usually can be kept satisfactorily for two or three weeks without such treatment, in a refrigerator or dry, cool cellar. If infertile, such eggs may be kept still longer.

SUGGESTIONS BASED ON LAW

(Issued by Authority of the State Department of Weights and Measures.)

Don't buy in a careless manner.

Don't ask for a peck or a bushel. It is unlawful to sell by dry measure. Ask for the price by the pound or hundredweight.

Don't buy on a scale unless the pointer is at zero, then let the pointer come to rest before the weight is taken.

Don't gossip while making purchases.

Don't be afraid to call attention to an error.

Don't handle produce; it is insanitary and causes the produce to spoil.

Don't help yourself to berries and other fruits.

Don't be backward in calling the attention of the inspector of weights and measures to fraud.

Don't fail to have your scales tested.

Don't attempt to sell contrary to law. Copy of the state law may be had on application to the sealer of weights and measures.

Don't get the notion that to weigh your produce is too much trouble. Such a notation may cause you trouble; to weigh it may make you money.

Don't purchase a scale without an agreement that the money will be refunded if it fails to pass inspection.

Don't think the inspectors are your enemies. They will assist you all they can.

Don't forget that a square deal hurts no one.

Summary of Weights and Measures Law

Section 25. Vegetables and produce must be sold or exchanged by weight or count.

Section 26. Berries and small fruit shall be sold by weight or in quart containers containing not less than 21 ounces, net, or in pint containers holding not less than 10½ ounces, net.

It is unlawful to use berry cups, boxes, crates or sacks a second time as receptacles for fruits or vegetables, or to use insanitary crates, boxes or sacks.

It is unlawful for any dealer or vendor to transfer berries or small fruits from one container to another, or from containers in which said fruits or berries are packed by the producer.

Section 27. Whenever any commodity is sold or exchanged on a basis of weight, it shall be unlawful to employ any other weight in such sale than the net weight of the commodity.

Section 28. Violation of the provisions of this law by a person or his agent, is punishable by both fine and imprisonment.

"Look here, Hiram," said Si, "when be you goin' to pay me them eight dollars fer pasturin' your heifer? I've had her now fer about ten weeks." "Why, Si, ther critter ain't worth more'n ten dollars." "Well, s'posin' I keep her fer what you owe me?" "Not by a jugful! Tell you what I'll do; keep her two weeks more an' you can have her."—Exchange.

WHY GO TO AFRICA FOR IVORY?

"How kind of you," said she, "to bring me these lovely flowers. They are so beautiful and fresh. I think there is some dew on them yet."

"Yes," said the young man in great embarrassment, "there is, but I am going to pay it off tomorrow."

What Effect Is The High Cost of Feed Going to Have on the Dairy Business?

By Ben R. Eldredge, Utah.

The dairy business is going to come out of this period of high prices right on top. There is no class of animals that can take care of high-priced feeds better than dairy cows. The trouble with many of our farmers is that they do not draw the line between cows and dairy cows. I ran on to a report of an experiment that was made some years ago when feeds were cheap, and I am going to introduce it here for an illustration.

Two cows that were purchased in a number were selected for the experiment, which was conducted for one year. Both cows were fed alike and a record kept of their product and its value. Cow No. 1 produced:

199 pounds of butter fat, at 28c, \$55.92; 4,740 lbs. of skim milk, at 20c per cwt., \$9.49. Total, \$65.21.

At a cost for feed and care for one year as follows:

6,300 pounds of lucerne hay at \$7 per ton, \$22.05; 1,260 pounds of bran and shorts at \$1 per cwt., \$12.60; 5 months' pasture at \$1.50 per month, \$7.50; care, \$20. Total, \$62.15.

Profit, \$3.06

Cow No. 2 produced:

358 pounds butter fat at 28c, \$100.24; 9,232 lbs. skim milk at 20c per cwt., \$18.46. Total, \$118.70.

She was fed the same as No. 1 and charged the same for care, \$62.15.

Profit, \$56.55.

That experiment

was made when feeds were cheap, but the amount of product and the amount of feed consumed might be the same today with the same two cows. The only difference would be in regard to the price of product and feeds.

The following shows the result with hay at \$14 per ton and other feeds in proportion and butter fat at 35c; skim milk being valued at 25c, which it is well worth as a feed with hay at \$14 per ton.

Cow No. 1:
199 pounds butter fat at 35c \$ 69.65
4,740 pounds skim milk at 25c per cwt. 11.85—\$ 81.50

Cost of feed and care (hay at \$14):
3,300 pounds lucerne hay at \$14 \$ 44.10
1,260 pounds bran and shorts at \$1.60 20.16

Pasture, 5 months, at \$2 per month 10.00
Care 20.00—\$ 94.26

Loss \$ 12.76

Cow No. 2:
358 pounds butter fat at 35c \$125.30
9,232 pounds skim milk at 25c per cwt. 23.08—\$148.38
Cost of feed and care, same as above. 94.26

Profit \$ 54.12

Now, let us go a little further and figure this same proposition with hay at \$20 per ton and butter fat at 40c and skim milk at 30c, for we must bear in mind that the price of dairy products has also advanced with the

Name and Record Your Farm

It was a splendid bill that passed our last legislature, which gives anyone the chance to name their farms and have them recorded.

The successful farmer must do some kind of advertising and this is one way of doing it, naming your farm and then use that name on all you produce.

A farmer should connect his farm name with all his products. It should be a name easily understood and not hard to remember. A name that can and will back up with quality products.

In selecting a name for farm, home or ranch, an appropriate one should be used, with the owner's name applied or worked in some way. Sometimes names are selected which

Airy Knoll, Arrowdale, Altamont, Avondale, Breezy Point, Bannerland, Clover Crest, Cloverdale, Dairy Meadow, Deer Lodge, Dairy Downs, Edgewood, Elmendorf, Echo Glen, Echo Grove, Excelsior, Eureka, Fairfield, Fairview, Fountain Home, Glendale, Grassland, Hawthorn, Homestead, Hazelnook, Haycroft, Jerseyland, Lyndel, Lawnview, Morning Glory, Meadows, Northwood, North Star, Oaklawn, Overview, Osage, Poplar Lane, Rockwood, Sunset, Sunrise, The Knolls, Willowdale, Woodland, Woodside, Woodlawn, Westwood, Willow Glen, Willow Lane.

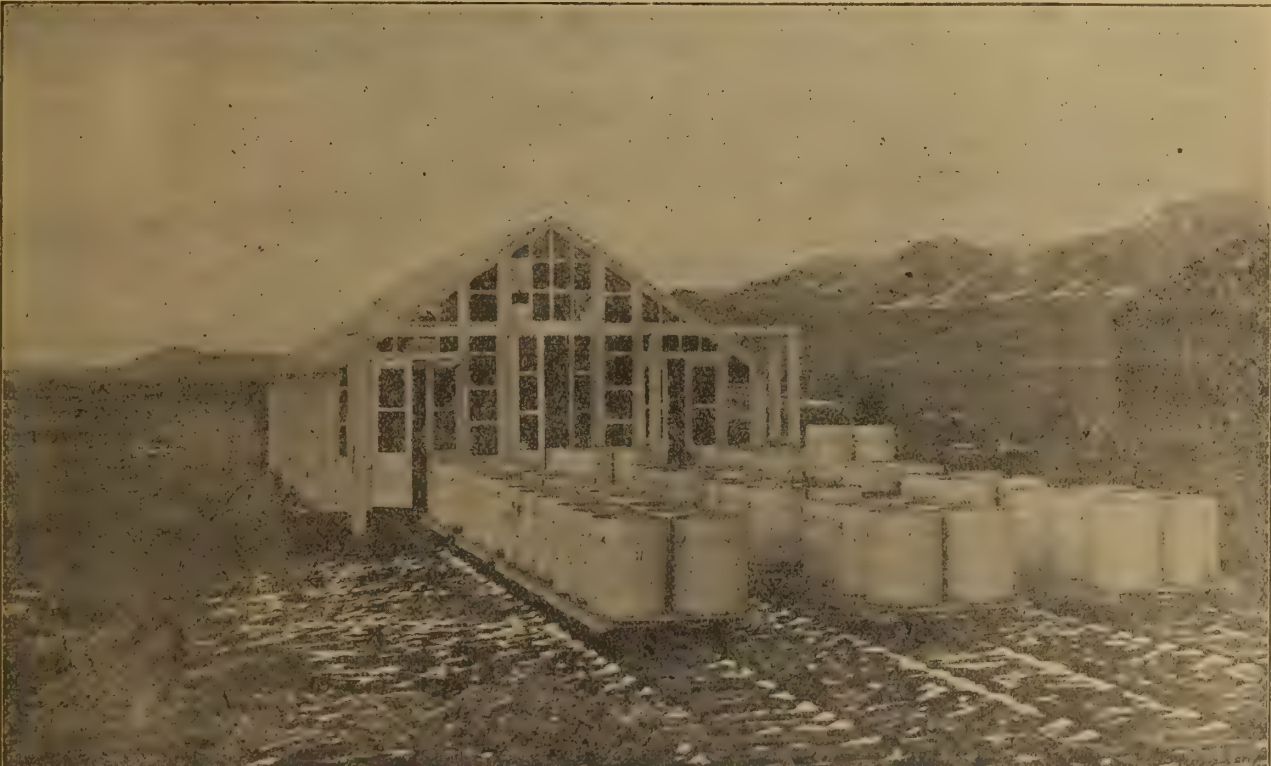
If you live near the water, by all means consider this feature in choosing a name. Here are some suggestions: Meadowbrook, Brooklawn,

The Breakers, Springlawn, Shadowbrook, The Ripples, Brookbank, River Bend Farm, Waterbrook, Brookby Farm, Brookside, Edgewater, Hillbrook, Brookside, Brookdale, Branching, Brook, Clearbrook, Lakeside, Lakewood, Riverdale, Riverside, Stillwaters, South Shore, Clearcreek, Springcreek and many others.

Names chosen from nearby trees are pleasing and popular: The Avenue, Evergreen, Elwood, The Orchards, Greenwood, Twin Oaks, Lone Pine, Woodlands, Elmknoll, Oakdale, The Maples, Maple Dell Hickory Farm, Laurel Dell, Four Oaks, Hickory Grove, Big Tree Farm, Cedar Hill, Cedarcrest, The Poplars, the Palms Fruitlands, Forest Home Hazel Wood, Live Oaks, Beechwood, Cedarcroft, Elmhurst, Elmwood, Forest Hill, Fair Oaks, Maple Grove, Pinehurst, Pine Ridge, Willows, Wildwood, Cottonwoods, Oak Grove Oak Park.

The choice is easy if you wish to consider the view of the character of land surrounding your home: Ocean View, the Crest, Uplands, Hill View, Hill Crest, Wayside Cottage, Rosecliff, Hilltop, Knollcrest, The Terrace, Ridgecrest, Bay View, Longmeadow, Green Hill, Meadowsweet, Hillandale, Undercliff, Valley View Farm, Fairview Cottage, Black Rocks, Bloomingdale Glens, Cragmore Cottage, Lakeview, Foothill Ranch, Glen Echo, Monte Vista, Eagleview, Grandview, Plainview, Sunnyslope.

Any of these names can easily be changed a little to suit the individual surroundings of the home. Vines or shrubbery often suggest appropriate names: Lilac Lodge, Fernbank, Briar Cottage, Green Hedge, Ivy Lodge,



Apparatus used in the famous experiment on the water requirements of various crops at the Utah Experiment Station. The proper crops to plant under different soil and moisture conditions were first definitely determined by means of the large cans shown in the cut.

price of feed, though not in the same proportion.

Cow No. 1:
199 pounds butter fat at 40c \$ 79.60
4,740 pounds skim milk at 30c 14.22—\$ 93.82

Cost of feed and care (hay at \$20):
6,300 pounds lucerne at \$20 \$ 63.00

1,260 pounds bran and shorts at \$20 25.20
5 months' pasture at \$2.50 12.50

Care 25.00—\$125.70

Loss \$ 31.88

Cow No. 2:
358 pounds butter fat at 40c \$143.20
9,232 pounds skim milk at 30c 27.69—\$170.89

Cost of feed and care same as above. 125.70

Profit \$ 45.19

(Continued on page 14)

are either misleading or have no meaning whatsoever as to the farm.

Try to select a name that will not generally be used so as to avoid duplicating. The difficulty in selecting seems to be in the wealth of material which there is to choose from.

A name gives charm and individuality to your home and a sense of permanence that you have never felt before. You realize that you are settled permanently in this spot and you take a new interest in making it as beautiful as possible.

Names may be divided into several classes according to the way they are suggested. To give it a personal touch such names as Adams Ranch, Smith's Poultry Farm, Jones Seed Farm, Johnson Duroc Ranch, Woods' Wheat Farm or take combination of two names Will and Ada and call it Willada Place.

In allowing the natural surrounding to assist in selecting we can chose Grove Farm Dairy, Alfalfa Fields, Mountain View, Airy Hill,

(Continued on page 11)

DAIRYING

COST OF PRODUCING MILK AND BUTTER FAT

I have been greatly interested, and have received much valuable information through reading the articles which have appeared from time to time in your paper under the heading "Dairying." My attention was forcibly called to the article in the issue of March 31st, 1917, under the heading, "Dairy vs. Dual Purpose Cows." I am at a loss to know upon what grounds the author bases his conclusions. For example, he states as follows:

"Holstein cattle are larger and more rugged and can, therefore, handle a larger proportion of hay and fodders, which are relatively cheaper, than can the smaller breeds. The Holstein cow will probably also produce milk at a smaller feed cost than will the other breeds. The feed cost of butter fat, however, will on the average be as much for Holstein as for other dairy breeds. Therefore, if the dairy products are to be marketed as city milk, the Holstein will probably be somewhat better. When butter or cheese or butter fat are sold, there is little or no choice between the breeds. Holstein milk contains on the average about 3 per cent of fat, while Jersey milk contains somewhat about 5 per cent, and Gernsey milk contains somewhat less than 5 per cent of fat."

I have been looking up the records of the different breeds and I can find no good grounds for the statement made above. On the other hand I respectfully refer you to a number of tests and records that have been made during the last few years.

At the World's Fair, Chicago, 1893, tests were conducted at which the different breeds of dairy cattle were entered. This test demonstrated that the Jersey cow was the most economical producer of both milk and butter fat. In class "B", for economical production of milk for all purposes, related to dairying, the Jersey, with production of milk averaging 41.5 pounds per cow per day, returned a net profit of but 39c per cow per day. The net profit for the best Jersey in class "B" was \$67.76. The net profit for the best Holstein was \$66.82. The net profit for the best Short Horn was \$47.35, and for the best Brown Swiss, \$45.16. While the poorest Jersey made a net profit of \$40.33, the poorest Holstein, \$32.63, the poorest Short Horn \$21.84 and the poorest Brown Swiss, \$33.90.

In 1904, at the St. Louis Fair, the Jersey cow again demonstrated that she was the most economical producer. "The Jerseys proved to be the most economical producers of butter fat and butter and for milk for all purposes of dairying. In butter production the leading cow was a Jersey. The best 4 were Jerseys; 19 of the

best 15 were Jerseys and the best herd was a Jersey herd. The Jersey returned one pound of butter fat for every 12 pounds of nutriment. The Holstein required 14,389 pounds of nutriment per pound of fat. The Short Horn required 15.52 pounds and the Brown Swiss 16,979 pounds to produce a pound of milk solids. The Jersey consumed 2,955 pounds nutriment whereas the Holstein required 3,823 pounds; the Short Horn 3,421 pounds and the Brown Swiss 3,638. The most economical of the 70 cows of all breeds in the test was a Jersey, and she was followed in order by 13 other Jerseys, there being no place won by a cow of any other breed until the 15th."

The Jersey not only demonstrated that she was the most economical producer of butter and milk but that she was also the most economical producer of cheese.

Quoting further: "At the St. Louis Fair, 15 Holstein produced 96,175 pounds of milk with an average test of 3.04 per cent, worth \$1,628.56. The cost of feed was \$515.70 leaving a net profit of \$1,112.86. 15 Jerseys produced 78,093 pounds of milk, 8,082 pounds less than Holstein, valued at \$1,640.95. The cost of feed was \$441.28, leaving a net profit of \$1,209.67. In other words the Holstein man must handle 8,000 pounds of milk more and receive \$100.00 less in money."

To quote further from reports of the champion cows for the year 1915, I beg to refer to the following:

"Sophy 19th, a Jersey cow, produced that year, 17,557 pounds of milk which was valued at \$323.02. The cost of producing this milk was \$146.64, leaving a net profit of \$176.38.

May Rilma, a Gernsey cow, produced during the same time, 19,673 pounds of milk, which sold for \$347.03. It cost \$198.49 to produce this milk, leaving a net profit of \$148.54.

Tillie Alcarta, the champion Holstein cow, for that year, produced 30,451 pounds of milk, which brought \$307.53. It cost \$209.13 to produce, leaving a net profit of \$98.40."

This leaves a balance of net profit in favor of the Jersey cow over the Holstein of \$77.80, and in favor of the Jersey over the Gernsey of \$50.14, which to my mind clearly shows that although the "Holstein are larger, more rugged and can handle a larger proportion of hay and fodders," they do not produce milk at a smaller feed cost than do some of the other breeds.

Very respectfully,

David A. Smith.

CHEESE AS A FOOD

Altho the production of cheese in Idaho and the other states of the Northwest is being increased very rapidly yet the factories are unable to keep up with the demand as the value of cheese as a source of protein and fat in a very concentrated form becomes more generally recognized. As at least a partial substitute for meat there are great possibilities in the judicious and intelligent use of cheese which furnishes a very much less expensive source of protein and fat than does meat. The following table shows the cost at current prices of protein and fat in ounces and of fuel value per 100 calories in the case of cheese and two of the more common cuts of beef.

	Cost per pound	cose per oz. of protein	Cost per oz. of fat	Cost per 100 calories of fuel values
Cheese	30c	7.4c	5.6c	1.54c
Beef Average	25c	10.3c	10.1c	2.67c
Porterhouse steak	30c	9.8c	10.4c	2.70c

A glance at the above table will show how very much more cheaply protein and fat may be supplied to the body in the form of cheese than meat. There is a common belief that cheese is rather difficult to assimilate and

is very likely to cause digestive disturbances. This change against cheese is however not borne out by experiment. Probably the chief cause of the difficulty sometimes experienced when cheese is eaten in relatively large quantities is the improper method of eating it. It should be clearly understood that cheese is a very concentrated solid food and as such should be eaten slowly and masticated thoroughly. If properly eaten very seldom will any difficulty be experienced with the digestion of the cheese.

The more liberal use of cheese will enable us very materially to de-

crease our table expense without rendering our diet any less nutritious.—E. F. Goss.

WHAT MADE HIM GROW

George was hampered by a mother

whose idea of godliness was cleanliness. Notwithstanding the frequent baths to which he was condemned, George thrived exceedingly. One day a neighbor remarked on his rapid growth.

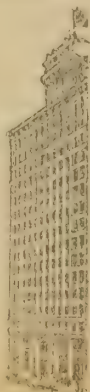
"Yes," said George, "that's ma's fault. She waters me too much!"

COST OF PRODUCING A 12 TON ACRE OF SILAGE

Plowing	\$ 3.00
Harrowing and dragging	1.50
Drill planting	.50
Seed at 4c per pound	.50
Nine cultivations	4.50
Seven loads of manure	7.00
Irrigating	1.00
Taxes on land and water	1.50
Interest at 7 per cent on \$150 an acre	10.50
Depreciation on harvesting and silage machinery	3.00
Wages for harvesting	8.50
Interest on \$300 investment	3.00

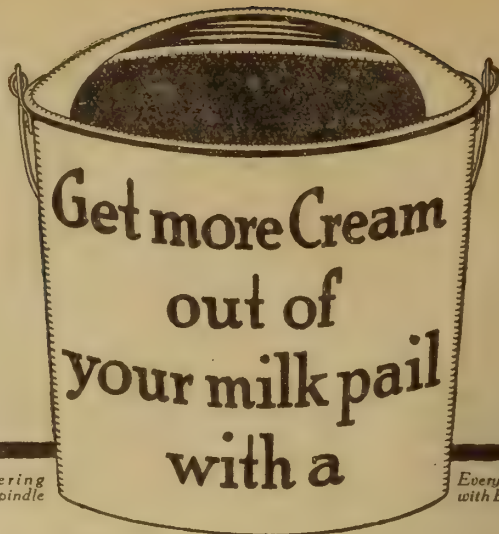
Total.....\$44.50
44.50 divided by 12 tons equal \$3.71 per ton.
—Utah County Farm Bureau News

This bank with the capacity to handle business of large proportions, has a spirit of helpfulness for the small as well as the large depositor.



Walker Brothers Bankers

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Has self-centering bowl; detached spindle

Every De Laval equipped with Belt Speed-Indicator

NEW DE LAVAL CREAM SEPARATOR

THESE are the days when you are getting more milk in the pail, and with butter-fat at its present high price you want to be dead sure that you are getting all the cream out of the pail.

You certainly can't afford to feed butter-fat to the calves and pigs at from 30 to 40 cents a pound.

All sorts of "claims" are made for various cream separators, but what you are looking for is "proof."

Here is the most convincing kind of proof that the De Laval is the cleanest skimming machine:

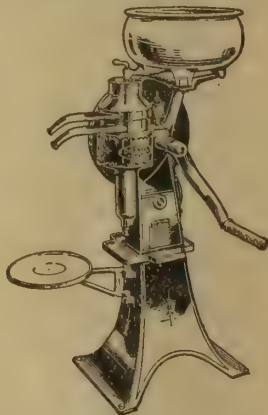
Fifteen years ago there were a dozen different makes of creamery or factory separators in use.

Today the creamerymen and large milk plants the world over use the De Laval almost exclusively. In fact, it's hard to find a large cream producer or creameryman who will allow any separator other than a De Laval in his plant, no matter what the price.

Why? Because they have found that it makes a difference of several thousand dollars a year to them whether a De Laval or some other make of machine is used. They simply can't afford to use any other machine.

This is proof of De Laval closer skimming that you can't afford to ignore. Even if you don't separate as much cream as the creameryman, you can't afford to waste it any more than he can.

Your local De Laval agent will be glad to let you try out a New De Laval on your own place. If you don't know the local agent, write to our nearest office for catalog or other information.



THE DE LAVAL SEPARATOR CO.

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

LIVE STOCK

CARE OF THE SOW AND LITTER

Success in raising a litter of pigs depends largely upon the kind of start they are given in life. D ring the first two or three weeks after birth, pigs are best fed through their mother. If this is to be well done, a good milk flow in the sow must be maintained.

The following conditions will stimulate high milk production in the brood sow during the summer months:

1. Supply and abundance of palatable, nutritious, succulent feed.
2. Provide plenty of cool, clean water both for drinking and for the "wallow."
3. Make generous provision for plenty of shade.
4. Offer plenty of opportunity to take exercise.

5. Keep clean and healthy and free from all lice and other parasites.

Feed. Where pasture is available many of the conditions mentioned above are met. Any pasture is good, but alfalfa is the best. The young tender alfalfa is nutritious, palatable, and juicy or succulent. The sow, however, cannot produce milk on alfalfa alone. Pigs have only one stomach and this is comparatively small. As the alfalfa contains a large amount of water and considerable coarse indigestible material, it is not possible for the sow to eat enough of it to enable her to produce much milk.

Where a well fenced pasture cannot be had, the sow and litter can frequently be allowed to run in the regular alfalfa field. There is not much danger of loss if the pigs are fed grain in a certain place twice a day.

Where pasture or alfalfa fields are not available green alfalfa or weeds may be cut when young and tender and fed in the pen. This of course requires more work, but will be found nearly as good. Either method of feeding will be found to cut down the cost of the ration.

Skim milk or buttermilk where available can take the place of alfalfa pasture to good advantage.

The grain to feed in addition to the feeds mentioned above will depend largely on the relative prices of the various grains. Corn, ground barley, oats, or wheat are all good, but are frequently high priced, especially oats and wheat. Probably a mixture of bran and shorts in the proportion of about 1 to 3 will in most sections be the most economical grain at hand. This has the further advantage of being a by-product which is not suitable for human food.

The sow should be given enough grain in addition to the forage to keep her weight constant. This will vary with the sow, but from 2 to 4 pounds per day for each 100 pounds live weight of sow will probably be sufficient.

Table scraps of most all kinds can be fed to good advantage. Potato peelings and other vegetable parings, however, are not relished in very large quantities by pigs unless they are cooked.

Water. Hogs do not sweat so their bodies must be cooled by some other means. They therefore take to a "wallow" as a boy takes to a swim-

ming hole. Care should be taken to keep the "wallow" clean and supplied with fresh water.

Plenty of clean fresh water for the pigs to drink is also essential.

Shade. In pastures where no trees or bushes are growing, a very inexpensive shade can be made by setting four corner posts to stand about 3½ feet above the ground and covering these with a flat roof of brush.

Exercise. Sufficient exercise is essential not only for the sow, but is especially necessary to keep the young pigs in good condition.

Cleanliness. "Dirty as a pig" is a comparison which may be true generally, but pigs are dirty because men force them to be. People would also be dirty if they were forced to spend all their time in one small room. Give a hog that has not been badly trained a sensible roomy pen and note the care with which he "keeps house."

Pigs are not only apt to be more healthy in clean quarters, but parasites are less likely to infest them. Whenever lice are seen on the pigs they should be sprayed with Kresol or some other substance which will kill all such parasites.

DON'T SELL BREEDING ANIMALS

"Don't sell your breeding animals unless you can replace them immediately with better ones," is the message the U. S. Department of Agriculture is sending to farmers and stockmen everywhere. "Don't let the temptation of high prices now being offered for live stock or undue fear of the prices asked for many popular feeds mislead you into selling a cow or sow that will drop the golden calf or litters. Such near-sighted profit taking or lack of courage, if widespread, would strike at the foundation of the country's live-stock industry and cripple it for years to come. As there is a shortage of meat animals throughout the world, we can not hope to import new breeding stock to replace those we foolishly have killed off. Our own breeding animals, therefore, must be regarded as the seed essential to the domestic meat supply of the nation."

DON'T SELL BREEDING ANIMALS.

Maintain and increase breeding herds.

Feed cheap roughages.

Feed live stock as little human food as possible.

"Feeds not available or needed for human consumption should be used as largely as possible in feeding live stock. By feeding straw or corn stover, especially for wintering mature stockers and breeding animals, farmers will make the best possible use of these roughages. In this way a large proportion of the straw and stover ordinarily burned or wasted can be manufactured into meat and milk. Grain sorghums, wherever they are available, should be fed to release corn for human uses. Grain, where fed, should be used as economically as possible.

"Every animal should be a factory for turning into food material inedible for human beings. This will necessitate changes in many feeding formulas and stockmen are urged to apply at once to the U. S. Department of Agriculture or their State agricultural colleges for information as to the most effective and economical methods of feeding live stock under existing emergency conditions."

IRRIGATION WATER AND MANURE—ITS EFFECT ON CORN

Conclusions drawn from a series of experiments covering the effect of varying quantities of irrigation water and manure on the growth and yield of corn, conducted by Director F. S. Harris and D. W. Pitman of the Experiment Station of the Utah Agri-

This is the Mower that's Easy on the Team

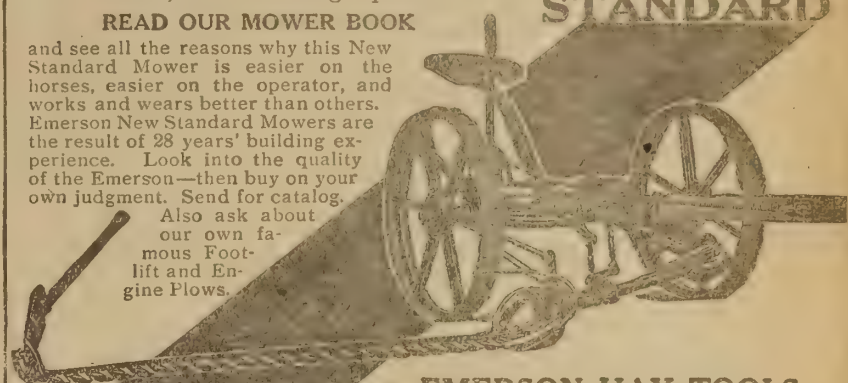
Even with a seven or eight-foot cutter-bar, it is as easy work for your horses as plowing corn. It is the only mower that carries the entire weight of machine, cutter-bar and driver, on the drive wheels. We've taken the weight off the horses' necks—taken the weight off the outside as well as the inside shoe—there's no sledding or dragging. The pull is all on the wheels, and it's a straight pull forward.

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(A Colorado Corporation)

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cultural College, and covering a period of six years, indicate that under general Utah conditions, twenty acre inches is the best amount of water to use on corn. The highest yields of grain was obtained with twenty acre inches, although thirty-acre inches produced the highest yield of stover. Where as much as forty inches of water was applied, the yield of the crop was decidedly decreased. The extra water was not only wasted, but the time used in applying it was lost and the fertility of the land was injured.

With corn valued arbitrarily at 72½ cents a bushel, and stover valued at \$1.00 a ton, the value of each acre inch of irrigation water applied was found to be as follows: with a 5-inch application \$1.90; a 10-inch application, 87 cents; a 20-inch application, 69 cents; a 30-inch application, 42 cents; a 40-inch application 24 cents. Where water is very scarce and land plentiful, economy would strongly urge the use of a small amount of irrigation water. The Value of manure, figured upon the above crop values, was found to be \$3.57 a ton when applied at the rate of 15 tons to the acre. These figures plainly show the necessity of very carefully saving farm manure. It gives large returns even when applied every year in relatively large quantities.

Don't "guess" or even "think" in feeding or otherwise dealing with your cows. Know! then you are on the safe side.

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bulletins.

This is a very timely bulletin and should be
helpful to all those who have vegetable gardens.
Send your name today and get a copy by return
mail.

IN DEFENSE OF FRUIT

The absence of profit from the fruit industry
during the last few years has so thoroughly dis-
couraged many fruit growers that they are digging
up orchards that have in years past yielded hand-
some profits. While we realize that the farmer
cannot live forever without returns, still we be-
lieve that many are hasty in destroying orchards
that are known to be good producers. It is
doubtless a good thing to eliminate the orchard
that is not well located and that pays only dur-
ing the very exceptional year, but to ruthlessly
dig up all trees seems to us entirely unwarranted.
The farmer should probably not have his all at
stake on a fruit crop, but to have fruit as one of
his sources of income in connection with other
more regular but less profitable crops seems to
us to be excellent farm practice.

A WEED IN TIME SAVES NINE HUNDRED

In nothing is promptness more effective than
in killing weeds. They can be killed with the
least effort when they are just coming through
the ground. At this time the least stirring of
the soil breaks the tender roots and the plant is
so small it cannot stand the shock. Later, after
the weed gets firmly established, it has to be
literally torn loose from the soil particles or
cut off below the ground in order to prevent it
from renewing growth. If it is allowed to grow

to maturity and produce seed, one weed may
scatter many thousands of seeds which in their
turn will be ready to plague the farmer. Better
begin early to cultivate and avoid all the trouble.
With many crops a harrowing after seeding be-
fore the plants are up will help greatly in con-
trolling weeds.

THE 1918 CROP

If war is to continue for any great length of
time, the food supply after a year or two will be
very important. The reserve food that is ordi-
narily carried over from year to year will gradual-
ly be decreased by the ever-increasing demands
of the war. It is well, therefore, for us to plan
for the future. The area of crops that can be
raised this year is already practically determined;
it is too late to increase it materially. By begin-
ning now to plan for 1918 a great deal can be
done to make the production during that year
very large. The present shortage of seed, the
lack of preparation of the land, and all such
limiting factors can be avoided by planning long
enough ahead. Let us make 1918 a banner year
for the production of foods.

THE ADVANTAGE OF WAR

The question is often asked: "Can any good
thing come out of war?" When the idea of war
enters the mind it is accompanied by all the
horrors of bloodshed and famine; and certainly
no one can consider war to be a pleasant busi-
ness.

An advantage that may result from it, however,
is that people are forced by necessity to be
economical and to save whenever possible. In
times of prosperity they are prone to acquire
extravagant habits and to waste more than they
use. During the hard times that accompany war,
rich and poor alike must adopt frugal habits
which should remain with them after the neces-
sity has passed. Why not begin now to be
economical before necessity commands?

DRAINAGE WILL HELP

We have thousands of acres of water-logged
land that could be made to produce good crops
during 1918 if the land is drained this year.

It is the duty of every farmer to make all of
his land productive, and it will be a very profit-
able investment for him to drain his land.

The government realizes the importance of this
work and will assist in every way possible. The
services of Mr. R. A. Hart, Senior Drainage
Engineer and a number of his assistants can be
secured without cost to any farmer just for the
asking. They will come onto your farm, offer
suggestions and make a survey so that you can
get some definite information as to cost and
feasibility of draining your land.

Why not take advantage of this liberal offer
of the government and have your land drained and
made more productive? Write to the "Irrigation
Investigations," 319 Federal Building, Salt Lake
City, Utah, and they will tell you when one of
these experts can come and help you.

MAKE GOOD USE OF ALL FEED

You may have heard the saying, "Some
European nations could live upon what America
wastes," if not, it is often repeated.

To show the thrift of some people, here is an
incident that happened last year. A French-
man, who is a careful student of economic con-
ditions, was being shown thru one of our farming
districts and he said, "we would feed thousands
of sheep each year on what you allow to go to
waste on your roads."

This story is told in order to emphasize the
importance, especially this year, of using all the
feed we sometimes call waste."

We must save all the animal food possible for
winter use. Enough feed is wasted each year
around our farms to feed many an animal. We
do not seem to appreciate the value of feed until
the winter comes and hay goes to extreme high
prices. Right now is the time to start and con-

serve the food for our animals for next winter.
Remember that saving is as important as pro-
ducing. Be thrifty and make the best use pos-
sible, right now, and for the rest of the year, of
all the feed of any kind around your farm.

FOOD SPECULATORS

Our farmers are answering the call of the
President of the United States and producing all
the food stuff possible. Production is important
but another of equal importance is to see that
the food, when produced, reaches those who need
it without speculators making as much as the
farmers has earned in producing it.

Hauling it to the market, manufacturing it into
certain kinds of food, such as flour, meal, etc.,
preparing it for human consumption, are neces-
sary cost, if not made to high.

Is there some way to eliminate the mishandling
and juggling of these products. Sold and resold
to jobber, wholesaler, special agents, and buyer,
the price is increased, often double or more, than
what was paid the farmer. All of this handling
and reselling does not add value to them, but a
profit is added every turn they make. These
speculators should be told how far they can go.
Producer and consumer should get together.

It is unfair to ask the farmer to make the extra
effort to produce food stuffs that is being done
this year unless something is done to protect him
against these speculators.

CULTIVATION OF POTATOES

One of the most important things that any farm-
er can do at the present time to increase his
potato yield is to cultivate. Harrow the ground
once a week till the potatoes are from four to
eight inches above the ground. As the potatoes
start to come up tip the harrow teeth back to an
angle of about forty-five degrees.

According to Dr. Geo. R. Hill of the Agricultural
College, each harrowing will add ten bushels per
acre. The harrowing will loosen up the ground
so that the air can go down to the roots, and this
will send the roots deep into the ground. This
is what makes a big yield. By cultivation is the
way to do it. Particularly should the ground
be cultivated when it rains. Cultivation inter-
cepts the diseases which are fostered by wet
weather; cultivation increases the yield, kills the
weeds, gets air to the roots, saves the moisture,
creates favorable soil conditions, reduces the
diseases to which the potatoes are subject.

The big thing from now on for the man who
wants to get a big yield of potatoes is to cultivate.
Cultivate today.

THE IDLE LAND

There seems to be a growing sentiment, that
the idle land should be made productive. Secre-
tary of the Interior Lane says that no man should
own land and hold it out of use.

We hear much about the farmer making every
foot of ground productive and we believe he
should. What about these land speculators,
many of them are holding land adjoining a farmer
who is industriously farming it, while the specu-
lators land lies idle beside him—not only idle,
but a breeding place for all kinds of weeds and
other crop pest that hinder the industrious farmer
from making a success.

Either make the tax so heavy on the land that
it will pay a greater share of taxes, or confiscate
it, and make it productive so that there will be no
shortage of food.

It is unfair, unjust to allow any man, or set of
men, to hold land purely for speculative purposes,
while thousands go hungry and prices of foods
climb to extreme heights, and for no other rea-
son, as we view it, than to let these land hogs
make profits from the industrious farmer who
tills his land adjoining the speculators.

Why not warn the idle land owners to make
them productive, and if they will not do it, seize
them and put them to use or tax the idle land
so high that it will be more profitable to farm
than lie unproductive.

Good Stands of Corn

Specialists Make Suggestions for Bringing Through Proper Number of Seedling Plants.

To make every acre of corn do its full duty this year, to bring its yield up to "war strength," it must be started off with a good stand. Farmers who exercise all means to this end at planting time will be well repaid at the harvest. Here are some suggestions from specialists of the United States Department of Agriculture that may aid in securing, as far as possible, the proper number of plants to the acre:

The best distribution of plants over the land is obtained by making the distances between single plants in the row and the distances between rows the same. With such an equal distribution, the least possible loss from competition is experienced. However, in order that sufficient plants be grown upon an acre to utilize most completely the resources of the soil and climate and at the same time permit intertillage and other desirable practices, it is usually necessary to sacrifice some of the advantages to be gained by even distribution for those to be gained by other desirable cultural practices. These cultural methods frequently may be altered so as to reduce this loss, and the greatest saving in this connection is by means of implements specially adapted to this work. Where general-purpose implements are used, distances between rows of as much as 5 or 6 feet are often considered necessary. By preparing the land thoroughly and then using highly specialized machinery for planting and cultivating the corn, the rows need be no more than 3½ feet apart and the distances between plants in the rows can be increased accordingly.

The number of plants per acre required for the best results will depend more or less upon the natural fertility of the land, the quantity of fertilizer used, the method of culture practiced, the time of planting, the evenness of the distribution of plants, whether other crops are grown with the corn, the variety, and the season. The season is, of course, the most important factor influencing the stand required and, as its character can not be foretold, it is evident that specific advice in this connection can not be given.

In practice, corn is commonly planted in stands ranging from 3,630 to 7,260 plants per acre, or 6 to 12 square feet per plant. Most stands of corn have been planted with an allowance of 8 to 12 square feet per plant.

One of the most deplorable losses due to defective stand is from the blank spaces seen to a greater or less extent in practically every field. The ability of the plants to utilize extra space rapidly diminishes as the distance increases, and the practical limit probably does not exceed 5 or 6 feet. Beyond this distance the loss so far as the corn crop is concerned is complete. Good seed of a uniform size and shape is an important factor in securing a stand, as it makes possible a more uniform distribution by the planter.

Burrowing animals and birds frequently do serious damage to the stand by eating the seed or by pulling up the very young plants. Odorous substances have been tried in various ways to prevent such attacks. The substance that is most favorably considered for this purpose at present is coal tar, because it seems successful as a repellent, it will not injure the seed, costs very little, and may be dried so as to plant freely in a machine. It is recommended that the seed be wet with warm water before adding the tar. A teaspoonful of the tar will be sufficient for a peck of corn. The mass must be thoroughly mixed and then dried before planting.

In wet, cold land the seed some-

times is covered with too much soil. On such land the seed should be planted just deep enough to have it in contact with moist soil.

In cold weather or on low, flat, or otherwise poorly drained land the seed may germinate badly, and the plants that start are slow in growing and weak. Worms, grass, and weeds are likely to destroy such corn if it is not assisted. From 25 to 30 pounds of nitrate of soda per acre, applied with the corn drill at the time the corn is planted, will quickly force the young plants past the period of greatest loss and thus greatly increase the chances of securing a stand.

Whenever it is at all difficult to get the desired stand, extra seed should be planted to offset the loss. Thinning will usually result in greater economy than leaving a defective stand or replanting.

OBSERVING THE ROADS

This is a very good time to take notes on our highways. Winter weather and spring rains have done their evil work. The results of efforts or lack of efforts at improvement are obvious. Plans for this year's improvements should be laid now while the evidence are fresh before us.

The following are some of the observations the writer has noted. The list is by no means complete, but can be added to by any one who travels the roads.

Many bad holes are caused by the lack of no side drainage ditches or by water standing in them. Still others are due to the swampiness of the land crossed by a road and raising the road or draining its foundation is needed.

Many roads are so wide that it is difficult to get sufficient crown to cause the water to run into the side ditches. Roads that are shaped and graded, as are the improved roads, are really better for it. Incidentally they are practically ready for sanding or surfacing whenever it can be done.

Sanding of the surface causes the road to go thru the winter for better. Some of the sanding is not well done the surface being left wavy. Graveling does even better than sanding. Nearby materials often give as good results as the imported article. The sand or gravel need not be clean as for concrete.

Well shaped roads that have been persistently dragged are in reasonably good shape. Many roads now need dragging.

A gas tractor pulls a grade well and doesn't stop to chat about the war.

In short there is so much bad and so much good road management in evidence at this season that every one should learn so much about road building and maintenance that mistakes would then be few and the dirt be moved while the moving is easy.

WE SHOULD WORRY—NOT!

If you are ever going to be large enough to conquer your troubles you must not worry over them. That is a sure way to make them bigger. As Bishop Patrick quaintly says, "The rubbing of the eyes doth not fetch out the mote, but makes them more red and angry; no more doth the distraction and fretting of the mind discharge it of any ill humors, but rather makes them more bound to vex us."

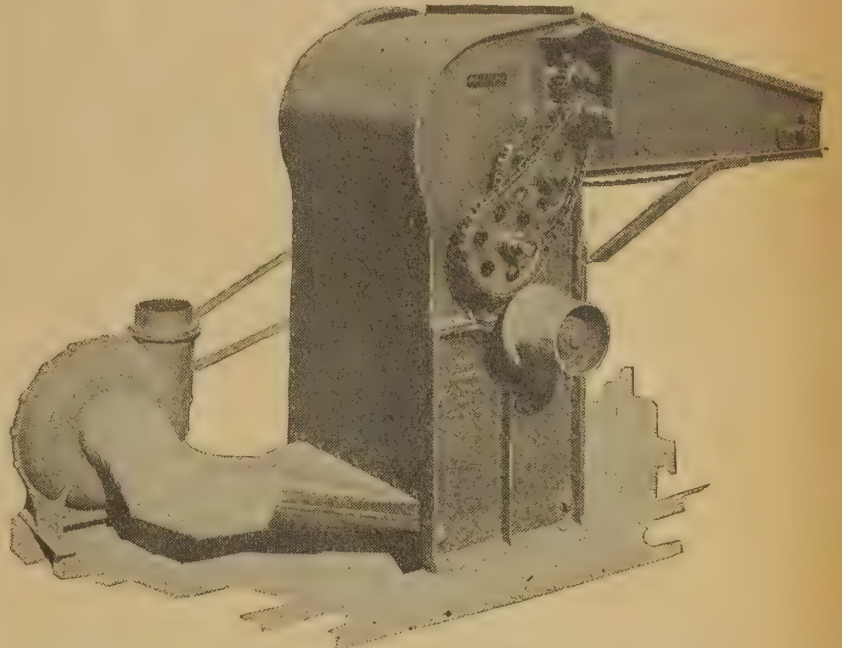
A wise man has admirably defined worry as "spiritual near-sightedness; a fumbling way of looking at little things, and of magnifying their value. True spiritual vision," he says, "sweeps the universe and sets things in their right proportion. Seen in its true relations, there is no experience of life over which one has a right to worry."

During a great financial panic, an influential Western business man was so harassed by the troubles threatening him that he felt he could no longer

GRIND ALFALFA HAY

You can grind a ton of alfalfa hay and it will do as much good as feed as two tons otherwise.

You can mix ground alfalfa hay with other feeds and it will put any kind of live stock in good condition for the market.



Send for a sample of ground alfalfa hay made on a Hochenauer Mill. You will be surprised to see how your stock like it. Every feeder and hay grower should have one. Write for full particulars.

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Spray Your Trees Now

Corona Dry Arsenate of Lead will give the Best Results.

Write today for Free Booklet. "How to Control Orchard Pests"

PORTER-WALTON CO.

Salt Lake City.

keep his hand on the helm or prevent the work of years from going to utter destruction. His concern was not for self alone, but also for the many who must suffer with him in the event of his failure. His mind was enveloped in such a fog of worry that when he needed them most he was fast losing his perspective and his capacity for decisive action.

In the darkest hour of his discouragement a business appointment took him to a large publishing house, where he had occasion to telephone. As he stood waiting, his eye was caught by this quotation on a card which hung beside the telephone desk, "When you get into a tight place and everything goes against you, until it seems you can not hold on one minute longer, do not give up. That is just the place and time the tide will turn."

The man read the words a second time, and as their meaning forced its way into his peroccupied consciousness his depression vanished as if a spell had been broken. He went back to his office and again took up the tangled threads of his affairs; but this time with new strength and courage. He stopped worrying and used the energy he had previously wasted in this way in planning and working.

And he won his fight.

What had happened in that moment of enlightenment at the telephone desk? Not one external circumstance had changed. As far as outside

factors were concerned the man's problem was an insoluble as ever, the outlook as hopeless. Nevertheless a vast change had taken place, but it was within. The man had stopped worrying. Faith had driven out fear, and the change in his mental attitude eventually wrung success from apparent failure.—Orison Swett Marden.

"USE YOUR TRACTOR."

"Help your neighbors" is the keynote of a special appeal to tractor owners issued today by Assistant Secretary of Agriculture Carl Vrooman.

"Every farmer who owns a tractor," he says, "owes it to his country this spring to do all the custom of exchange work he can do without neglecting his own work. Every hour that his tractor would otherwise be idle it ought to be at work helping a neighbor who is behindhand with his plowing or harrowing. Make your outfit work from dawn to dark; make it work all night if you have enough operators to fill the shifts. The acreage to be harvested this fall hangs on the plow. Don't let an acre that might otherwise be planted go untillied because your tractor is in the shed. Help your neighbors and thus do your part in strengthening the allied lines on the battle fronts of Europe."

Worse than a quitter is the fellow who never begins.—Exchange.

HOME

KIND OF FLOUR TO USE

To make our wheat crop go as far as possible is part of the program of conservation. The Utah Agricultural College suggest the following:

Whole Wheat Flour should be used in preference to white, because

1. More loaves can be made than from the same amount of white flour.
2. The outer seed coats of wheat and all cereals contain valuable mineral matter.
3. It aids in regulating habits of elimination.
4. It contains certain life-giving substances absent from white flours.
5. It is cheaper even at the same price.

6. Bread from this flour is made very much the same as from white flour except that it should not be mixed as stiffly and it should not be baked in as hot an oven. The food value of both bread and breakfast cereals may be increased by the addition of raisins, dates or figs. Fresh fruits also may be served with the cereals. The freshly garnered wheat cooked for many hours is a cheap and nutritious form of cereal.

The millers will not grind whole wheat flour unless there is sufficient call for it. Ask your women to pledge themselves within the next month to ask for this flour. A letter will be sent to the millers urging them to prepare to meet the demand.

Some sample recipes from the Bulletin just published by the Department of Agriculture, follow:

Whole Wheat or Graham Bread.

- 1½ c. lukewarm milk.
- 3 c. whole-wheat or graham flour.
- 3 tbsp. brown sugar.
- 1¼ tsp. salt.
- ½ yeast cake.

Home Ground Wheat Bread.

- 1¼ c. water or skim milk.
- 1¼ tsp. salt.
- 1 tbsp. sugar.
- 3 c. home-ground wheat flour.
- ½ cake dry yeast or 1 cup liquid yeast.

Rye Bread.

- 1 qt. milk.
- 2 tbsp. sugar.
- 4 tsp. salt.
- 2 tsp. butter.
- 1 cake compressed yeast.
- 3 c. flour (1 c. wheat and remainder rye flour.)

Nut Bread.

- 1 egg.
- 1 c. milk.
- ½ c. sugar.
- 3 c. flour.
- 3 tsp. baking powder
- 1 tsp. salt.
- 1 c. English walnut, pecan or hickory nut meats cut into small pieces.

Rhubarb, one of the earliest products of the garden, supplies mineral matter in the form of calcium and potassium. It is a valuable fruit for bottling this year since it may be put up in cold water without cooking. Do not waste a stalk but store for your own or other's use.

Recipes for Uses of Rhubarb.

Bottling—Thoroughly wash the fruit, put in sterile jars, flush with cold water until overflowing, and seal.

Stewed Rhubarb—Flavored with nutmeg or combined with dates, raisins, or figs.

Rhubarb Sauce with Meat—Cut young rhubarb into small pieces, sprinkle with sugar, add a small amount of water and bake in a covered vessel in slow oven until tender.

Rhubarb and Rice Cream—Cook rice in milk until stiff. When cold fold in stewed rhubarb. Set in molds and serve with whipped cream.

Rhubarb and Macaroni—Boil macaroni until tender. Put three alternate layers of stewed fruit and macaroni in a deep dish. Cover with a light custard. Bake slowly until custard sets.

Escalloped Rhubarb—Alternate layers of bread crumbs with small pieces of butter and layers of uncooked

rhubarb sprinkled with sugar. Add a small amount of water and cook until rhubarb is tender.

"MILK IS A GOOD FOOD"

Miss Mabel Hendricks.

Food is anything which when taken into the body supplies it with heat and energy, builds up broken-down tissue, promotes growth, and regulates body processes. Then a good food supply heat, energy, building material, promote growth, and be obtainable at a moderate cost.

Let us first determine what the composition of milk is. It contains.

Protein	3.3%
Carbohydrates	5%
Fat	4%
Water	8.7%
Ash	.7%

Since protein means "I stand first" let us consider it.

The protein of milk is a very high form of protein containing many important amino acids. About 80% of this nitrogenous material is casein. The other 20% is lacto albumin. The amount of casein can be determined by precipitation with rennet and dilute acids and the lacto albumin by boiling the filtrate. The casein in milk is held partly in solution and partly in suspension is an extremely fine colloidal condition. The composition of casein is:

Carbon	53.1%
Hydrogen	7.0%
Oxygen	22.5%
Nitrogen	15.8%
Sulphur	.8%
Phosphorous	.8%

This protein material has high nutritive value. About 98% is completely digested and absorbed.

It is particularly adapted to storage in the body cells. This is due partly to the phosphorous in the casein and partly to the amino acids.

Protein is rich in amino acids. Some of the important ones are:

Amino Acids	Casein	Lacto-albumin
Leucin	10.5	19.4
Prolin	6.7	4.0
Tyrosin	6.5	4.9
Lysin	7.6	8.1
Tryptophane	1.4	3.0
Cystine	0.1	.....

If these the most important are tyrosin, tryptophane, lysine and cystine. No protein is sufficient without these, they are life giving. If the body does not have them the result is mal-nutrition or a wasting away of the body. Lysine is especially important. It is absolutely essential to growth. Many tests have been made on baby rats all of which bore out the statement that the body cannot grow without lysine. Herein lies the fact that milk is used so exclusively for feeding babies and young children. Every child should have one quart of milk a day during the growing season.

These important amino acids are distinctly higher in milk than in other proteins.

Lysine	5.95	3.76	.15
Tryptophane	1.50	?	1.00
Cystine	.1	?	.45

Milk protein has still another advantage. It does not contain purins. Purins are half burned out nitrogenous materials which overwork the excretory organs. They produce uric acid which results in rheumatism or gout. Milk proteins do not do this. As a last word we would say—Milk proteins are a proteins.

The carbohydrate of milk is in the form of milk sugar or lactose. This lactose does not have the sweetness usually associated with this word sugar. It has only a slight sweetish flavor. It is the most digestible form of sugar known. It also helps to retard putrefaction in the intestines. Due to these facts it is suitable for infants and invalids and is often used for medicinal purposes.

Fat is present in an emulsified form. Fine globules of fat are held in

suspension. Milk fat is composed of glycerides of the fatty acids some of which are insoluble in water, such as palmitic, stearic, and oleic acids. These make up about 92% of the fatty acids. Milk fat is a fluid at body temperature. The fine division of fat globules aids digestion.

Ash constituents include all so-called inorganic elements necessary to moral nutrition of man. It exists as salt and organic matter. They are composed largely of chlorides and phosphates of sodium, potassium, magnesium and calcium of iron oxide. The calcium and phosphorous are most abundant. The calcium is very efficient kind and is required by the body for growth. Milk contains slightly more calcium volume for volume than does lime water. The phosphorous exists in organic form which is easily handled by the body and is very necessary for bone tissue. Then again we see it is essential that babies and growing children should have plenty of fresh milk and clean milk. The iron content of milk is small but is an unusual kind of iron found in organic form, very efficient and exceptionally favorable for assimilation.

Besides these we find that milk also contains life giving Vitamines. Milk is used to the last drop. It contains a fat soluble vitamin which is absolutely necessary to growth, also a water soluble vitamin which is equally important. Without the vitamin content in food the body produces a disease known as beri-beri.

Milk also contains from 82—90% water, normal cow's milk will contain from 84—88%. The water of the milk holds the solids in solution. Milk is an economical food.

It is not only the actual cost of our food we should consider but that what food gives us. Does it supply the body with heat? Does it give tissue building material? Does it promote growth and regulate the body?

Milk gives us heat, energy, building material, it contains high percentage of protein, efficient amino acids, efficient calcium, organic phosphorous and iron, emulsified fat, vitamins and water. Therefore we would say that milk is an economical food even at 15c and 20c per quart. In most localities it can be had for 8c and 12c per quart.

In one quart of milk we have food value equal to:

- 8 eggs
- 2 lbs. potatoes
- 7 pounds lettuce
- 2 pounds chicken
- ¾ pounds lean round beef
- 5 pounds turnips
- 1-3 pound wheat flour.

9 eggs	666 cal	.....23c
1 qt. milk	675 cal	.....10c
1 lb. meat	709 cal	.....22c

Milk is an economical food because 1st. Dieters where milk is used abundantly are less expensive and just as acceptable.

2nd. Increased consumption of milk increases proportion of protein.

3rd. Milk supplies place of other food materials.

4th. Milk is not a luxury but simply an economical article of diet.

5th. 16% of American diet is made up of milk and milk products.

6th. In no other way can the food habits now prevailing especially in cities be so certainly and economically improved as by a more liberal use of good milk.

Then to sum up we have proven that milk is a good food because it contains:

- 1st. High percentage of efficient protein.
- 2nd. Efficient amino acids.
- 3rd. Efficient calcium.
- 4th. Organic phosphorous and iron.
- 5th. Emulsified fat.
- 6th. Water.
- 7th. Life giving vitamins.

Also that milk is an economical food because in considering food we consider what it gives to us and not actual cost. No other food can give us what milk does at so low a cost.

Then considering these ~~sign~~ fact-

ors, milk gives us heat, energy, building material, promotes growth and regulates body processes at a moderate cost, therefore milk is a good food.

FOOD VALUE OF BEANS

Gertrude McCheyne.

How to provide the most for the least expense is the task today. Economy in the provision of food depends upon a knowledge of what food contains. The value of a food depends upon its power to maintain body tissue and provide energy, for the same amount of money.

BEANS give more food value for the same money than beef, eggs, cheese or potatoes.

BEANS contain starch in sufficient quantity to make them a fair substitute for potatoes.

BEANS contain the kind of protein that make them a substitute for meat.

BEANS contain three of the important mineral substances, phosphorus, calcium and iron.

BEANS maintain an alkaline condition of the blood.

BEANS lack fat which is supplied by the addition of fat pork. They may also be combined with peanuts and salad dressings.

BEANS are encased in a hard seed coat and require long, slow cooking. To overcome the additional fuel expense, use a fireless cooker or a steam pressure cooker.

BEANS are of many varieties, which are too seldom used. The Mexican

If you want money, drop us a line.

We loan on first mortgages on Utah farms or Salt Lake City real estate at reasonable rates.

Prompt action and fair treatment if you do business with us.

Palmer Bond & Mortgage Co.

WALKER BANK BUILDING
SALT LAKE CITY

Sugar Shows Least Advance

According to the figures compiled by U. S. Department of Labor, out of seven food products, the average cost of which has increased less than 10 per cent, sugar showed the smallest advance in price. The department's average price of sugar per pound in February, 1916, is placed at 8 cents, and for February of the present year 8.1 cents, an increase of one-tenth of a cent per pound. When you order

EXTRA FINE Table and Preserving Sugar ABSOLUTELY PURE

you receive one of the cheapest and most highly nutritious foods on the market. This sugar is pure and clean. Housewives everywhere praise its exceptional quality.

Soon be canning time. Now is the time to buy the sugar you will need. Any dealer will supply you.

Made by

UTAH-IDAHO SUGAR
COMPANY

into and lima beans afford possibilities in variety of preparation and may be seasoned with vinegar, catsup or cheese.

BEANS form the principal article in rations made up for soldiers, lumbermen and those doing heavy manual labor. Their cheapness, staying qualities, and nutritive value indicate that the provident farmer will make them a big crop this season.

A dish of baked beans is in itself a meal providing tissue, energy and mineral matter and being sufficiently heavy to make it a waste of food to serve at the same time an excess in the form of meat or eggs. Bread and a dessert of fruit is sufficient to complete the meal.

BREAD FLOUR

The outer seed coats of cereals contain protein, minerals and certain substances known as vitamins, the latter absolutely necessary for a child's growth.

Therefore use low patent white flours and wheat flours. Even at the same or higher price, they contain more nutriment of a certain kind.

Use the whole wheat berry, freshly garnered and cooked for many hours, as a breakfast cereal. All the nutriment of the berry is contained therein.

The expense of bread may be reduced by addition of cornmeal. It will pay to plant corn. Finely bolted corn meal is of but little food value. Use coarse meal. Do not waste good food materials by over-milling them. The by-products are sold for stock food. Why not use some of them at home.

DOES IT PAY TO SELECT AND TREAT SEED POTATOES?

In the summer of 1916, twenty-four farmers of Utah county co-operated in demonstrating the results of selecting and treating seed potatoes before planting. These twenty-four men each planted two lots of potatoes—one lot selected for wilt and treated with corrosive sublimate for the skin diseases, the other planted with seed as it came from the bin. These two lots of seed were from the same bin of potatoes—one planted in the old careless way, the other in the improved way. Both lots were planted the same day, side by side, and cared for in exactly the same manner.

In the fall the potatoes dug separately and weighed. The average yield of the treated and selected fields was 303 bushels per acre. The average yield of the bin-run fields was 187 bushels per acre.* The difference showed an increase of 116 bushels in favor of the improved method. The additional cost of doing the extra work was not more than \$2.50 per acre. At last fall's price of potatoes, \$1.00 per bushel, the saving amounted to \$113.50 per acre. At the present price, the saving was \$335.00 per acre.

Does it pay to select and treat seed potatoes?

Here are the results of a few co-operators:

	Yield of treated per acre	Yield of untreated per acre
Andrew A. Borgeson	640 bu.	400 bu.
S. G. West	350 bu.	87½ bu.
Erig. E. Gardner	270 bu.	243 bu.
J. B. Warnick	350 bu.	280 bu.
F. S. Harvey	300 bu.	270 bu.
P. A. Hanks	250 bu.	100 bu.
Iyrum Christensen	325 bu.	70 bu.
John C. Nelson	350 bu.	175 bu.

Does it pay to select and treat seed potatoes?

There were 25 4-5 acres of potatoes in this test planted under the improved method. They yielded a net increase of 2993 bushels due to the selection and treatment. This meant 2993 at last fall's prices, and \$8979 at the present prices.

Does it pay to select and treat seed potatoes?—Utah County Farm Bureau News.

Plan the racks so the hay is not carried over the backs of the sheep. A tool that is full of hayseed does not work well for the flockmaster.

Drainage of Irrigated Farm Lands

By C. F. Brown, Civil Engineer.

Taking up the third division of this discussion, "Construction Features," as applied to drainage of water logged and alkaline ground, I desire to just mention lightly a few particulars that are necessary, and to emphasize some portions which are but imperfectly understood at this present time.

1st.—The location of the particular source of seepage as it flows into the soil requiring drainage is an essential of good drainage engineering. This is the foundation or basis upon which successful reclamation by drainage rests. It cannot be determined except by the experienced engineer or agriculturist who has made the movement of ground water a study and who is capable of applying the principles of Physics and Hydraulics to the solution of this problem. This information determines whether the water comes to the soil under a pressure from higher elevation flowing from the more previous strata below upward through the soil pores or whether it comes to the farm or particular area in question by lateral se-

ditions, however, have been encountered in various parts of the arid regions, necessitating the exploration of and the construction of drainage works in the soil to depths of 45 ft. below the surface. One notable instance of this condition arises in the Snake River Valley under the Twin Falls project, in the lava formations. In this particular instance, the water which does the damage, is conveyed from the higher lands and from the canal losses to the lower lands chiefly through a porous stratum ranging in depth from 35 to 40 ft. Below the surface.

Ordinary tile drainage is of no avail under circumstances of this kind, and in this connection it became necessary in solving this problem to drill wells from the ordinary depth of tile drains 5 to 8 ft. to a depth of 45 ft through the lava through which the water which was being held under pressure and portions of which rose to the surface through the fissured lava and porous soils overlying this formation, thus water-logging and rendering



Where a large tract of land needs drainage, the Experiment Station advises the farmers to co-operate in the purchase of a machine to dig trenches for the tile. The apparatus shown in the cut made it possible to reclaim and raise valuable crops on land practically worthless before.

page from higher lands and needs to be intercepted.

The solution of this problem depends upon the soil formation and the extent to which such soil surveys have been made. The usual methods of obtaining such information is by boring holes, digging wells, collecting data concerning the soil from available sources such as the structures encountered in digging and boring wells, etc.

In this connection, it will also be necessary to determine the character of the soil for the purpose of determining the qualities of the particular soils being examined as affecting the movement of soil water to the drains. The necessity for this knowledge of the geological formation of the soils is for the purpose of determining the depths of drainage and the spacing between tile lines.

It is a principal of soil physics that the coarseness of grains, porosity, the percentage of fine material comprising the soils has a tendency to affect the movement of water between grains. As it is necessary to lay tile so as to allow a minimum hydraulic gradient at practical spacing, it can readily be seen how a knowledge of underground conditions enters into the determination of the depths of drains.

Continuing, it is necessary also for the purpose of determining the spacing or distance between tile lines. Underground surveys are necessary for discovering the existence of formations affecting the outlet and the possibility or relieving water under pressure. This feature of the drainage of irrigated lands is a question that is not very well understood and not generally recognized. Con-

alkaline the areas which were affected. By means of these wells, it was possible to relieve the pressure or furnish an outlet through which the water flowed with less resistance than through the soil, and each 8 inch well thus bored through the overlying formation cut off the seepage from an area approximately two acres.

This relief well system is the key-stone to the successful drainage of these lands.

Another instance of a formation of this character has come up in connection with our practice at Richfield, Utah, involving the drainage of the High School site there, in which the water was contained and brought to the land in a coarse gravel stratum at a depth of 40 ft. below the surface. As it was impractical to lay drains to a depth of greater than 20 ft., which was all of the depth necessary for the foundation and basement of the High School, it is proposed and construction work is now being carried on to sink at least two wells down to the underlying gravel stratum for the purpose of relieving the pressure below.

This subject is now being made the matter of a special paper which will be presented this evening to the Utah Association of Members of the American Society of Civil Engineers and the Utah Society of Engineers joint session.

VARIETY TEST ON POTATOES AND CORN

The Utah County Farm Bureau is to conduct a series of variety tests this summer which will demonstrate the best kinds of potatoes and corn to raise in Utah County. Clyde W.

Lindsay, County Agricultural Agent has secured seven varieties of seed potatoes and eleven of seed corn which are being distributed throughout the different towns to make the test as broad as possible. One peck of each of the seven kinds of potatoes will be furnished 44 different co-operators. The local Farm Bureau have selected two farmers in each town to grow the potatoes. The varieties include Rural, Pearls, Russets, Eurekas, Cobblers, Northern Spys, and Irish Beauties. There will be 44 different farms upon each of which the seven varieties are to be raised. The varieties are to be planted side by side the same day and cared for in the same manner. Each farmer will get enough of each variety to plant 10 rods.

A record will be kept which will show the disease resisting powers of each variety, the earliest mature and the largest producer. The Farm Bureau aims by this test to standardize the potato crop for this section. When the best variety has been selected an effort will be made to get all the farmers to raise it, to grade those potatoes offered for sale and to sack them in uniform, labeled sacks.

The corn variety test includes seed obtained from North Dakota, Minnesota, Nebraska, Iowa and Utah. The two best varieties from each of these states were secured. The result sought after in this work is to demonstrate the earliest to mature, the largest yielder of fodder and the largest yielder of corn. As in the potato test, there will be 44 different farmers growing the demonstration plots.

County Agent Lindsay is delivering the potatoes and corn personally to the various farmers, giving them the necessary cards and instructions.

ALFALFA SEED FOR SALE

Best Grade.....	14c
Good Grade.....	12½c
Good Grade Seed somewhat dark.....	10c
Less than full sacks ½c lb. higher. All prices f. o. b. Oasis or Lynndale, Utah.	

These three grades all run high germination test.

Cash must accompany the order.

A. A. HINCKLEY
Hinckley Utah

Genuine EDISON PHONOGRAPHS

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RE-CREATE Music. Thos. A. Edison's great triumph. The world's master phonograph, latest model which is now offered to you at Edison's Own Price. On easy terms. A little each week or month soon makes it all yours. Free catalog of ALL styles mailed postpaid without obligation. DAYNES-BEEBE MUSIC CO. DEPT. E. SALT LAKE CITY, UTAH

Big Money in Running Water

Let us start you in a business that will make you from \$15 to \$50 a day when farm work is slack. Other men have done it for years with an

One Man One Team

Improved Powers Combined Well Boring and Drilling Machine

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One team hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed. Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for wells to water stock and for irrigation. Write for free illustrated circulars showing different styles. Lisle Manufacturing Co. Box 976 Clarinda, Iowa

SUGAR BEETS

PREPAREDNESS

By Mark Austin.

The thing uppermost in the minds of the people of the world is preparedness, and in line with this thought, while our great nation is preparing her army and navy, the farmers should prepare to the highest possible efficiency, the soil. As I have before stated, in former issues, I know of no better or cheaper way than that of plowing into the soil green alfalfa, which the soil so much needs, then planting to corn or potatoes; if corn, it will help relieve the food situation for both man and beast, and if the work is properly done the soil will be thoroughly fertilized and suitable for various other kinds of crops, including sugar beets, for a number of years to follow. Sugar is one of the staple food products and furnishes several times more energy units than wheat; for instance, an acre of sugar beets, figuring on a 15-ton crop, produces about 7,156,230 calories; an acre of wheat, figuring on 30 bushels per acre, produces about 1,984,514 calories, or about one-third that produced by sugar beets. As we know 15 tons of beets per acre is not an excessive crop, think of the food produced by farmers whose tonnage is from 15 to 25 per acre. Certainly farmers who have suitable lands should prepare for an increase of acreage in sugar beets in the years that are to follow, if they desire to take care of the increased demands that will be made upon the country, both by the loyal men and boys who are at the front fighting our battles and by the citizens at home, and our friends, the allies, abroad. Germany has found it profitable to feed her cavalry horses on sugar, as she reported last year having fed 2,000,000 sacks of sugar to them, to take the place of other food products.

One of the reasons our farmers have not been able to extend their operations in beet culture faster than they have done, is for lack of preparation and systematic rotation of crops; this we would like to urge them to do.

INCREASED SUGAR BEET ACREAGE IMPORTANT

In view of the sugar situation, both domestic and foreign, it is advisable to increase the beet sugar output in the United States this year as far as the seed supply and the farm and factory conditions will permit. The indications are that in many portions of the area devoted to sugar beets in this country the acreage this year will exceed that of any previous year and will be in many cases limited only by the amount of seed now available. In other localities it is understood that there is considerable beet seed which is being held in reserve for next year's planting in accordance with the usual practice. Under the existing conditions in this country and Europe, it may be advisable, says the United States Department of Agriculture, to utilize at least a portion of this reserve seed in those localities in which the farming and factory conditions will permit the handling of a larger acreage of beets than has at present been contracted for.

Sugar, an important food in time of peace, is doubly so in time of war, both because of the energy contained in a pound of sugar as compared with a pound of other foods and because the conduct of modern warfare has developed many additional uses for sugar. Therefore, the sugar companies and farmers of this country would be performing a patriotic duty by increasing the sugar output so far as practicable this season.

Undoubtedly considerable increase in sugar beet acreage could be brought about in some localities without interfering with the production of other

crops. In the sugar beet growing states, except California (where the crop is already planted and growing), many farmers who have contracted to grow beets can undoubtedly increase their acreage somewhat. Many farmers in the sugar beet areas who have not yet contracted to grow sugar beets could undoubtedly plant a small acreage, thereby still further increasing the sugar production. Owing to the fact that sugar beets can be produced to advantage for sugar-making purposes only in those areas where sugar mills are located, the areas in which they can be grown for sugar production are limited as compared with the larger areas that are or may be devoted to the production of other foods.

The sugar beet by-products, tops and pulp, are of high value for stock feeding purposes. Arrangements should be made, therefore, to utilize the sugar beet by-products as an aid in producing an extra supply of meat and dairy products. Every pound of beet tops or pulp utilized for stock feed will save a certain amount of grain and other feed required for meat and dairy animals, or will increase the meat and meat products output if properly used.

SUGGESTIONS TO OUR FIELD SUPERINTENDENTS AND FARMERS

By Mark Austin.

It would be well in thinning the beets to leave as uniform a stand as possible and to leave the beets just a trifle closer together. We will have a shorter growing season this year than usual, and if this method of thinning is carried out the beets will ripen quicker than if left the usual distance apart. Our labor contracts provides that the beets should be thinned from 9 to 14 inches apart. On rich lands, if the farmers can get about 17 or 18 beets per rod, or 9 to 11 inches apart, it will help them to ripen quicker than usual, and will, without doubt, give the farmers more tonnage, on rich lands, thus making it possible to harvest a little sooner, so attention and care should be given this matter.

Another suggestion is, that the farmers do plenty of cultivating. It is a good thing where possible to cultivate the beets twice before thinning, and as fast as possible after. I have thoroughly demonstrated, as no doubt many of our farmers have, that every time beets are cultivated it encourages their growth and hastens their development, which increases the tonnage; especially is this necessary in a short season. The stirring of the soil puts life into it. Plenty of hoeing around the plants should also be indulged in by the farmers; this will not only keep the beets clean, but will also hasten their growth and development.

SIX PER CENT MONEY FOR FARMERS

In order to encourage the farmer to increase their production and help them buy more land, the Utah-Idaho Sugar company has organized a farm loan department, which deals with the farmer direct and loans him money at 6 per cent. Many farmers can use money at this rate for increasing their holdings and running their farm business.

Officials of the department report that scores of farmers have applied for loans ranging in amounts from \$500 to \$10,000. The department has willingly granted all requests thus far, especially to farmers who are planting beets.

Money is lent on a farm mortgage basis at a 6 per cent interest rate. It is reported that a great many of the farmers whose farms are already mortgaged on a 10 per cent rate are grasping the opportunity offered by the sugar company to clear up their

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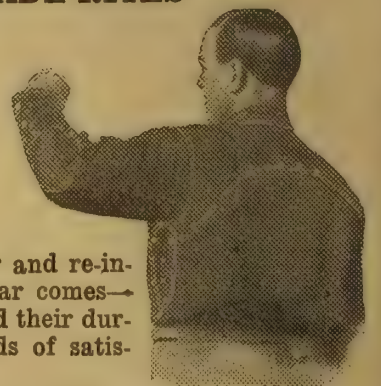
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Ogden, Utah.

mortgages and take the sugar company's money at a much lower rate.

The majority of the loans made thus far are to farmers who want the money to buy additional land. The greater percentage of the loans have been made to Utah farmers.

It is stated that the loans will greatly increase the farm area of the state. The Utah-Idaho officials assert that many thousands of acres of beets will be planted as a direct result of the loans.

Application for these loans can be made direct to the company's office at Salt Lake City or to the field men in the district where you live.

ITS SOURCE

In a school in the city slums the teacher was giving an oral examination.

"Where do you get your milk and butter and cheese?" she asked.

"Cows," answered most of the child-

ren, though many gave their favorite answer—"from the store."

"And eggs?" demanded the instructor.

"Hens," answered those who did not answer "store."

"And wool?" asked the instructor.

There was only one answer to this question—"the store."

"Yes," answered the instructor, "but how does it get in the store—no w think, wool— wool, you get wool from the back of—what?"

Expectantly, she awaited the answer, following one small girl's up-raised hand, and she got it, too.

"Back of the counter," answered that one small girl.—Exchange.

Flowers die from lack of sunshine. Many a business dies from lack of advertising. Publicity is the sunlight a business demands. See that yours doesn't expire for lack of it.—Farm Machinery.

Bacteria in Relation To Soil Fertility

When considering the soil one is not apt to realize that it is the home of millions of very small plants called bacteria and were it not for these tiny organisms the soil could not produce any crop. These bacteria are the means whereby the food already present in the soil is prepared for the growing crops.

When bacteria are mentioned one first thinks of disease. To be sure, many of our diseases are caused by bacteria but the number of these kinds is comparatively small. Almost all of the bacteria in the soil can be called our friends.

Bacteria are very small, ranging from 1-50,000 to 1-1,000 of an inch in length. But they more than make up for their small size by their great numbers in the soil. An ordinary sandy soil will generally contain about 2,000,000 per ounce but after some attention has been given to its cultivation the number of bacteria may increase to over 100,000,000 per ounce.

There are various conditions affecting the growth of bacteria in the soil. They are moisture, temperature, air, food supply, and soil reaction. Excessive moisture or severe drought interferes with the growth of bacteria the same as it does with the crop. Therefore, strive to maintain the proper moisture condition for the crop and the bacteria will take care of themselves. Bacteria work best at

ordinary summer temperatures. Most of the beneficial bacteria in the soil need air but not too much of it. Loosen up tight soil and compact loose ones to bring about the proper amount of air. The food supply for the bacteria is very important. As a general rule, sandy soils do not contain much of this substance, but by adding organic matter in the form of green or stable manure the food for the bacteria may be increased and thus these organisms will work better and make more food for the growing crop.

By "soil reaction" is meant whether the soil is "sour" (acid), or "sweet" (alkaline). It is well known that most "sour" soils do not produce good crops. This is because the soil bacteria do not like this condition and refuse to work. By adding sufficient quantities of lime to the soil, this unfavorable condition can be remedied. This will cause the bacteria to begin their work again with the result that a good crop may be grown.

It is therefore evident that the greatest care should be taken on every farm to maintain conditions satisfactory for the best growth of the beneficial bacteria in the soil. Govern the moisture conditions by proper drainage or cultivation and the temperature will take care of itself. Loosen a tight soil and compact a sandy one to give the bacteria the right amount of air and turn under enough green or stable manure to furnish food for them. Never allow the soil to become "sour", but, if this condition should occur, add lime to prevent it.

Under the proper soil conditions as outlined the bacteria will change the plant food in the soil in such a way that it can be taken up by the growing crop. The relation between bacteria and soil fertility is very close and if proper conditions are maintained for the growing of crops these same conditions will be satisfactory to the bacteria in the soil.—T. L. Hills.

FEEDING VALUE OF PLANTS

Bureau of Chemistry Reports Results of Research on Protein.

The recent annual report of the Chief of the Bureau of Chemistry, United States Department of Agriculture, shows that much work of a research nature has been done during the past year on the chemical composition of various cereals and other plants in order to form the basis for practical nutritive experiments. The proteins of the plants have been analyzed and new constituents discovered in some of them. The feeding value of plants has heretofore been estimated largely on the basis of protein they contained. Investigations have shown, however, that the proteins in various grain and other feeds differ greatly in composition. Two cereals which contain approximately the same amount of protein may vary much in feeding value because the protein in one of the cereals contains certain constituents necessary to nutrition which are lacking in the proteins of the other cereal.

A new protein has been found in the nitrogenous compounds of kaffir corn. The composition of this new protein has been determined. It contains the amino acids lysin and tryptophan, both indispensable to the normal nutrition of animals. These are not found in the proteins of maize. Now that this is known, the report states, a rational attempt can be made to learn how kaffir may be fed to make it no less valuable than maize.

The peanut has been found to contain an abundance of diamino nitrogen. This form of nitrogen is indispensable to the normal nutrition of animals and is contained in inadequate amounts in the common cereals from

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which most feeds are derived. Peanut press cake should therefore prove to be an easily accessible material to make such cereal feeds more efficient the report states. Practical feeding tests will be made in co-operation with the Bureau of Animal Industry.

The proteins of cotton seed, jack bean, tomato seed, cowpeas, corn, corn germs, and wheat have been determined and studied. Many analyses of forage plants of the arid and semi-arid west were made for the Bureau of Plant Industry.

SAVE YOUR BOTTLES

Shortage of Cans and Jars Threatened—Preserve Jams, Jellies and Juices in Bottles

The home canning specialists of the United States Department of Agriculture urge every housekeeper to save bottles—especially wide-necked ones—for putting up fruits, preserves, jellies, jams and fruit juices. Saving of bottles is highly important, they say, as there threatens to be a serious shortage of regular jars and preserving cans this season.

The fruit products named, if sealed with corks and paraffin, can be kept perfectly in these makeshift containers. Jellies, jams, and preserves can be kept even in ordinary drinking glasses, by the use of paper and paraffin. Fruit juices should be packed in ordinary small-necked bottles.

Vegetables, soups and meats, on the other hand, to keep must be sealed by the usual fruit-jar or tin can packing methods. Reserve regular containers for foods that cannot be packed in bottles.

A serious shortage of preserving jars and cans is threatened.

Glass bottles—especially wide-necked ones—are useful for putting up fruits, jellies and preserves.

Put up fruit juices in ordinary bottles.

Reserve regular preserving jars and cans for canning vegetables, soups and meats.

The specialists are also urging all members of canning clubs and others not only to can products, but to dry and evaporate all such products as apples, pumpkin and squash. They advise strongly that if containers are scarce locally, those in stock should be used to preserve perishable products which have the highest nutritive value. Nothing should be packed in jars or cans which can be conserved effectively in other ways.

Candy containers or other glass jars with screw tops or glass stoppers, and in fact any receptacle of glass, crockery, or porcelain, can be sealed with cork or paper and paraffin.

Large tin canisters or tin cans with removable covers, provided the body of the container is air and water tight, will be found useful in canning certain fruit products. Such containers can be sterilized and their covers hermetically sealed in place with solder or wax.

THAT'S DIFFERENT

Johnny—"Oh, look, Mama, the ice-man's kissing the cook."

(Mama starts for the kitchen.)

Johnny—"April Fool. It's only Dad."—Illinois Siren.

NAME AND RECORD YOUR FARM

(Continued from page 3)

Green Acres, Hazel Dell, Green Lane and Rose Cottage.

Cultivated features offer many suggestions: Roselawn, Cloverlea, Shady Lawn, Sunnyside Cottage, Fairlea, Clovernook, Alderlawn, Rosemead, The Blossoms and Garden Villa.

Many prefer to consider the house itself and to choose a characteristic name from it,—as Gray Gables, Brown cottage, Queen Anne Cottage, Three Towers, Stone Chimney, Greystone, Cobblehack or Halfway Cottage.

For large estates there are more pretentious names: Broadacres, Terrace Grove, Wildfield Farm, Greenwood Manor, Rose Court, Caribou, Lodge and Maple Park.

From these or a combination of any you can think of or select a name that is in keeping or in harmony with your farm and surroundings. After the name is selected then let others know what you have chosen and make it a standard, the products coming from it are always the very best in this way a name will soon become an asset to you.

To record your farm name application should be made to State Auditor, Joseph Ririe, State Capitol, Salt Lake City, Utah. A fee of \$2.00 is charge and you get a beautiful certificate which can be framed. The name is registered and no one else can use the same name. So get busy and name your farm and have it recorded. Do not wait until the other fellow has used the name you wanted. A description of your property is necessary when you send name in. You must also give section, township, range and number of acres.

ELIMINATING THE SLACKERS

Every dairyman should, thru membership in a cow-testing association or by making the weighings and tests himself, make an extra effort this year to find out just what each of his cows is producing in terms of pounds of butterfat. If the herd contains "slackers" it is important that they be discovered very soon and dealt with as they deserve. Especially when feed is at such a premium an animal which cannot produce milk and butterfat enough to make fair returns on the feed she consumes has no place in a dairy herd. The feed is needed for the individuals which can economically turn it into milk or milk products for human consumption. Care should be taken however that no animals are discarded which can profitably add to the nation's food supply. The dairy cow produces one of the nation's most important foods. Her great ability to add to the nation's food supply should be more fully appreciated. No dairy animal should be sent to the block until she has been proven absolutely unable to produce butterfat economically. It is just as great a mistake under present food conditions to sell for meat a dairy animal which can produce many times her value in milk as to retain those whose low production can only result in losses. Culling a herd is important but as a basis for such culling we must have figures which either condemn or commend an animal in terms of pounds of butterfat produced.—E. F. Goss.

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COUNTS"



Report of County Agent Work in Utah, April, 1917

Hans A. Christiansen, Beaver, County Agent.

Beaver County.

Potato Growing Project—Meeting with the co-operators in each local Farm Bureau was held and the amount of corrosive sublimate needed for the treatment of seed potatoes ascertained, and the chemical ordered in bulk. Retail prices in the County were 40c per ounce, but by buying co-operatively it was secured in Salt Lake City for 17½c per ounce.

Miscellaneous—The Farm Bureaus have sold six cars of hay to the Box Elder County Farm Bureau. By this co-operation the price of hay to our members was raised over \$2.00 per ton what the dealers would give, and the farmers in Box Elder County got their hay considerably cheaper than they could buy it from their local dealer.

We are collecting samples of irrigation water and sending it to the College for analysis. Orders for the purchase of pure bred cattle in the east have been received, and a man is in the East now making the purchase.

In the campaign for increased food production, meetings have been held in each town and district in the County, and committees appointed to take charge of the work. The County School Board, also agreed to appoint a Club Leader to work with the boys and girls during the summer.

Box Elder County.
Robert H. Stewart, Brigham, County Agent.

Dairy Project—On account of the late spring and the scarcity of food, many farmers are withdrawing their orders for dairy cattle. However, a shipment of about 75 to 100 head will be made this season.

Stock has been subscribed for a co-operative cheese factory in the Mantua district. The erection of the building will commence soon. Orders for the erection of 8 silos have been given.

Crop Standardization—Two cars of Swedish Select oats for seed have been shipped into the County this spring, also several cars of potatoes, 1500 pounds beans, and 2000 pounds corn.

Miscellaneous—A campaign for the eradication of the Ground Squirrel was made in Mantua and Perry districts. Reports are not all in yet, but preliminary reports indicate that the work was very successful.

The Farm Bureau has shipped in 8 cars of hay this month.

Carbon and Emery Counties.
Wallace Sullivan, Price, County Agent

More and Better Live Stock—The State Veterinarian was in the county two days inspecting horse disease. Eight head of horses died in one locality due to forage poisoning. Live stock of all kinds are in excellent condition and there will be very little loss due to feed shortage.

Dairying—Work going on as usual. One more Babcock Tester has been purchased.

Potato Production—The biggest acreage of potatoes in the history of the counties is being planted. Al-

most everyone is treating for disease and giving unusual care in the preparation of the soil. The seed supply is all used up and considerable more is wanted.

Farm Management—Ten co-operators were visited and their farm account books looked over. All the co-operators were doing their best to keep a correct record.

Miscellaneous—The bean industry is assuming a considerable importance this year. Seed for 200 acres has been secured and will be planted. Everyone is planting the Pinto variety. The boys' and girls' club work in Carbon County is progressing rapidly. Meetings have been held in all the schools and a large enrollment has been secured.

Seed for variety tests in wheat and corn has been distributed.

Meetings have been held in six towns, encouraging increased food production.

From observations and reports there will be between 15 per cent and 20 per cent increased acreage in food crops.

Directors' Meeting—The time was devoted to discussing methods of securing increased yields. Committees were appointed to look after different phases of the work.

Iron County.
Alma Esplin, Cedar City, County Agent.

More and Better Live Stock—Ten pure bred animals of the beef type have been ordered in the shipments from the East.

A number of silos will be built in the County this season. A set of forms for construction was purchased co-operatively by a number of farmers. The first one is now being erected.

Oat Smut Control—Four oat smut treatments demonstrations have been held during the month, and co-operators signed up at each.

Farm Management—Much time has been spent on the campaign for increased food production. Nine public meetings on this work have been held. Two Club Leaders for the boys' and girls' clubs have been appointed to assist in this work.

Parowan and Enoch districts have each organized local Farm Bureaus this month.

Three Federal Farm Loan Associations have been organized.

With the assistance of the Irrigation specialist, the work on the measurement and distribution of the waters of Coal Creek is being carried on. Two men have been employed to assist in this work.

Millard County.
Jos. P. Welch, Hinchley, County Agent

Good Roads Project—Oak City and Southerland farmers have donated labor and teams to grade about seven miles of road.

Sugar Beet Growing—The planting on the Demonstration Farms has begun. Much interest is manifest in this work.

Dairy Project—Eight herds are now being tested for butter fat production,

and the co-operators are well pleased with the record.

Club Work—On account of shortage of funds, the School Board decided they could not employ a club leader so the Farm Bureau agreed to pay the expenses of the man, and a man is now at work with the boys and girls. Campaign for the home gardens has been waged in every community.

Miscellaneous—Two car loads of seed grain have been shipped in the month. Much work has been done to increase the food supply of the county.

At the directors' monthly meeting the importing of a car load of dairy cows was discussed. It was decided to ask the County Commissioners to quarantine all hogs shipped into the county, to avoid bringing in hog cholera.

Salt Lake County.
Heber J. Webb, Sandy, County Agent.

Sparrow Eradication—Hunter district reports 200 birds killed on each farm, with 100 farms reporting. It is estimated that 90 per cent were destroyed. Bennion district reports very successful results, 2500 have been found dead, and very few left, which means that most of them died without being found.

Smut Control—Smut control demonstration was completed in the county this month.

Miscellaneous—In the campaign for silos, a series of meetings have been held in different parts of the county. The Dairy Specialist and County Farm Bureau President assisted at these meetings and much interest was aroused.

The County Commissioners appropriated money to buy a car of seed potatoes, and garden seeds, to be distributed free, to poor people who could not afford to buy their own seed. Garden seed to the value of \$616.00 has been thus been distributed, and the car of potatoes are on the way from Idaho.

Orders for 21 brood sows have been received, but we can find only ten animals to fill these orders. Much time has been spent on the campaign for increased food production, and all local organizations are co-operating in the work.

Sevier County.
William W. Owens, Richfield, County Agent.

Crop Standardization—A few early potatoes have been planted. The potato demonstrators are preparing their land and seed. The Farm Bureau has purchased corrosive sublimate in bulk thereby enabling the farmers to secure it at one-third the drug store retail price. This fact is increasing the amount of seed that will be treated.

Most of the barley demonstrators have planted their crop. It was not treated for smut, as smut in barley is of very rare occurrence in this county.

One hundred pounds of cleaned and graded Swedish Select oats have been placed with demonstrators in all but one town of the county. These men have agreed to treat the oats for smut and to grow these oats along with other varieties as check plots.

Dairying—Four beef cows have been culled from dairy herds as a result of testing, one good cow sold high as a result of her record. Twelve head of pure bred Jerseys, cows and heifers, were purchased for the farmers of the county by the Farm Bureau dairy committeeman. By buying together, a saving of five dollars per head was made after deducting all expenses. If the Farm Bureau had not taken up the matter, no more than four head would have been purchased.

Miscellaneous—The Farm Bureau live stock committeeman has gone East to purchase a car load of beef bulls and heifers for the members.

Efforts have been made through the Bureau, the churches, and the schools to cultivate every acre of ground. There is an increased acreage of every town, the wheat will be doubled. The

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number of chickens and pigs raised will be more than doubled, largely through the efforts of the schools in their club work.

Utah County.

Clyde W. Lindsay, Provo, County Agent.

More and Better Live Stock—In answer to the questions sent out last month to each purchaser of pure bred bulls in our winter shipments the following answers were received: 41 had done very well; 6 had done fairly well; 1 had not done well; 38 were well satisfied; 7 were fairly satisfied; 2 were not satisfied; 6 gave reasons why they were not satisfied—the size being the principle one; 27 reported no recommendations for improving the next shipment; 17 gave suggestions for improving the next shipment, the principle ones being; 1st, put up more money; 2nd, bring back the money if you cannot get good animals; 3rd, dip them for lice before starting.

Orders for nine pure bred animals were collected and sent in the April 20th shipment. Their total cost is to be \$1,625.00.

We are trying hard to line up some brood sows and young pigs for our county.

Farm Bureau Activities—Twenty-one county directors were present at our monthly meeting held April 2. A special meeting of directors was held April 10, at which time were present. This special session organized a greater production campaign. A line-up of fifteen recommendations was adopted and sent out to every local bureau advising immediate action. Every bureau (22) held public mass meetings and reported great enthusiasm and a general response to the new call of our President.

Alfalfa Weevil Control—The farmers throughout the county have responded very well to our spring cultivation campaign. About 90 per cent of our total area was cultivated. Most of the twenty-five co-operators left check strips.

Miscellaneous—The county agent vaccinated twenty-four animals at Cedar Valley for black leg.

The campaign by the Farm Bureau for greater production has resulted in a 10 per cent greater area of planting. The acreage of beets is somewhat reduced while potatoes and wheat are the principal gainers.

The acreage of potatoes will be increased 200 per cent.

An inspection of the dry farms with J. W. Paxman showed that about 50 per cent of the fall wheat had winter killed.

Seed potatoes are scarce.

Quite a few people need help in obtaining money for seed.

The campaign on ground dog control in the five southern districts is progressing favorably. Two districts report 75 per cent of their ground dogs are dead.

Weber County.

W. Preston Thomas, Ogden, County Agent.

Dairying—The co-operators in cow testing who did not get discouraged by the high price of feed, are still doing good work. Two sires have been brought into the county farms from within the state and two have been ordered from the east.

Potatoes—A county campaign on seed treatment has been carried on during the month, by demonstration meetings, by personal farm visits, by letters, by phone and by County and Local committeemen making farm to farm visits. The result on the potatoes planted so far show that 85 per cent are treated. The percentage will go higher for the late potatoes. Six farms in Ogden Valley are going to devote their attention largely to raising of seed potatoes.

Drainage—The petition for the creation of a Drainage District at Plain City has been drawn and is now being circulated. The local at Farr West is considering drainage very seriously. The indications are that the first district created in the county will be at Farr West. The Local

Bureaus at Pleasant View, Harrisville, Riverdale and Roy, have selected a farm to be drained. Work has started on the above mentioned. These drained farms are to be used as purely demonstrational. It looks like we will get at least one farm drained in every town in the county.

Miscellaneous—Farm Loan Associations are busy making out their papers for the Berkeley Bank. Two associations have the papers ready to file with the bank. The Bureau was forced to enlarge its paper, and in addition issued one special issue during the month. The County Commissioners have given the County Agent an assistant, Mr. L. M. Price has been selected for the position. The Bureau has ordered 100 cars of coal. The live stock committee shipped in 300 tons of hay and sold it at \$30.00 per ton, a total of \$2,250.00. This price was \$7.50 below the dealers price.

Directors Meetings—The following was taken up at our directors meeting held April 14, 1917.

1st—To get every acre of land planted this season.

2nd—To hold a general mass meeting in every town in county.

3rd—To make a seed survey.

4th—To finance those who need seed. Arrangements were made with local banks for money at 6 per cent. Money to be borrowed by Bureau and turned over to the farmer.

5th—The treating of all grains and potatoes that are to be planted in the county.

GRASSHOPPER CONTROL

Spring and Fall Protective Measures.

Grasshoppers begin to feed upon the farmer's crops immediately upon hatching from the egg. Unlike many insects, there is no grublike larval stage nor is there any resting or true pupal stage. They are active and able to hop about almost immediately upon emergence from the eggs. They are, however, unable to fly while young, as it takes from 70 to 90 days for them to develop wings. The farmer should, therefore, attack the pest during its young stages, since not only less material and labor are required but they can not fly to untreated fields as they often do when mature.

There are three principal methods of control. Destruction of the eggs, trapping the insects in the field, and use of the poisoned baits.

The eggs of grasshoppers are deposited in the ground, or in the crowns of plants such as alfalfa in the drier regions. Where cultivating implements can be used, the ground containing eggs should be thoroughly plowed, or disked, and harrowed in the fall, as these operations prevent the eggs from hatching the following spring. Digging up the soil by hand is practicable only in gardens, truck farms, or ground under intensive cultivation.

The cost of the common method of trapping is by the use of a simple horse-propelled implement called a hopperdozer. This consists of a long shallow pan or trough, with a back and side wings rising at right angles to the pan, and is mounted on runners. The pan is constructed of galvanized sheet iron, the back and side wings may be built of wooden frames covered with stout muslin or light cotton duck, and the runners are made of wood or old wagon tires. The pan is kept partially filled with water, covered with a film of low-grade kerosene. As the hopperdozer is drawn over the field the grasshoppers jump or fly against the back and most of them are precipitated into the oil-covered water in the pan. A slight touch of oil is fatal to the insects. These implements can not be used on uneven, stony, or recently cleared land, nor in meadows or fields of grain where the crops have reached a considerable height. Even where they are used successfully, a good many grasshoppers escape being killed.

The most effective method of control, is the use of poisoned baits. Poisoned-bran bait has proved to be

a simple, reliable, and cheap method of destroying grasshoppers. This bait is prepared as follows: Wheat bran, 25 pounds; Paris green, 1 pound, or white arsenic, 1 pound; 6 finely chopped lemons or oranges; low-grade molasses, such as refuse from sugar factories, or cattle molasses, known as "black strap," 2 quarts; water, three to four gallons. The bran and Paris green or other arsenical are mixed thoroughly while dry, then the fruits are chopped finely and added, and lastly the diluted molasses is poured over the bait and the whole thoroughly kneaded. A coarse-flaked bran is most desirable, although where this can not be obtained easily ordinary middlings or alfalfa meal may be substituted; a low-grade, strong-smelling sirup or molasses, however, is essential to the entire success of the undertaking. Crushed ripe tomatoes, watermelons, or limes may be substituted for the lemons or oranges, if necessary. Ordinary powdered white arsenic (arsenious acid) contains nearly twice as much arsenic as Paris green and is comparatively low in price. The powdered form of arsenate of lead may be used, but in this case twice as much of it must be used as of the Paris green. In semiarid regions water should be added to the bait at the rate of 4 gallons to 25 pounds of bran, as in these climates the bait dries out very rapidly and the extra moisture is necessary in order to attract the grasshoppers.

Another effective bait is the modified Criddle mixture. This is prepared as follows: Fresh horse droppings, one half barrel; Paris green, 1 pound, or powdered white arsenic, 1 pound; finely chopped oranges or lemons, 6 to 8 fruits, water sufficient to make a moist but not sloppy mash. This bait must be thoroughly mixed before being distributed and as most people object to handling this mixture with the bare hands, a pair of cheap rubber gloves may be used for this purpose.

Both the poisoned-bran bait and the modified Criddle mixture are distributed over the infested fields by sowing broadcast, either on foot or from a light wagon or buggy. A broadcast grain seeder, mounted on a wagon, has been used successfully for this purpose in the western portions of the country.

In applying the poisoned baits in orchards, care must be taken to avoid distributing it close to the trees, because severe injury to fruit trees occasionally results from such applications of arsenical poisons.

The time of day chosen for distributing the poisoned baits has an important bearing upon the results secured. In semiarid regions the bait should be distributed in late afternoon or early evening, just before the grasshoppers ascend the plants on which they usually pass the night. They are apparently hungry and thirsty at this time and greedily take the bait if it be available. Farmers should not be discouraged if the grasshoppers do not drop dead immediately upon eating the poison, as it usually takes from 24 hours or more for the full effect of the baits to become apparent.

WATCH YOUR CROPS FOR PESTS

Vigilance and a stock of poisons will beat the insect enemies this year. Be on the job against insect pests this season. Make your food contribution to the human family, not the insect family. Farmers who provide themselves with insect poisons and then keep a vigil for the first outbreaks of crop enemies will bring through the largest yields. Failure to detect an outbreak at its beginning and delay in getting combative material may be fatal to crop attacked.

That a great part of the annual loss to grain crops due to insect injuries can be avoided by vigilance and vigorous action on the part of growers is not sufficiently realized. Frequently insect outbreaks originate within a limited area, and when this is the case it is often quite possible to stamp them out before any great damage has been done. If the outbreak is general, then community action is essential to pre-

vent the infestation from becoming widespread.

Watch your crops constantly. Make a daily survey of the fields during the most active growing season if possible.

If in doubt as to the identity of a pest, send specimens promptly in a tight tin box to your county agricultural agent, State Experiment Station at Logan.

KENDALL'S SPAIN CURE

The old, reliable remedy you can depend on for Spavin, Curb, Splint, Ringbone or lameness. Thousands have proved it invaluable. Get a bottle from your druggist. Price per bottle \$1.00 for \$5.00. Treatise on the Horse Free at druggist or from Dr. B. J. KENDALL CO., Knoxville, Tenn., U. S. A.

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It Takes Punch In the Power To Do Farm Work

TOY tractors have fooled a great many people, makers and buyers alike.

Theory won't plow a stony field or steadily drive a threshing machine. Nothing but strength, weight and power will do this kind of work.

The Nichols & Shepard Co. build work engines and build them so that you get paying results when they are at work.

Red River Special Line

Two sizes of Oil-Gas Tractors, 25-50 and 35-70 H. P., full power on kerosene.

Your neighbor is running an engine of our make that will exactly fit any need you may have. He bought it because he wanted the best and he has written to us to say that he got it. His letter is published in a little farm paper that our nearest branch house will be glad to send to you free with a complete catalog. Write for them and secure reliable home information before you buy a power outfit of any kind.

Nichols & Shepard Co.
In Continuous Business Since 1848
Builders Exclusively of Red River Special Tractors, Wind Stackers, Feeders, Steam Traction Engines and Oil-Gas Tractors
Battle Creek Michigan

WHAT AFFECT IS THE HIGH COST OF FEED GOING TO HAVE ON THE DAIRY BUSINESS

(Continued from page 3)

Cow No. 1 is representative of many thousand cows that are in the dairy herds of the state today, and they are the cows that are owned by the man who is complaining and says "keeping cows does not pay." He is hurt, but he does not know exactly where, and the simplest thing in the world is to keep a record of those cows and find out where the pinch comes. The dairy cow shows a profit with hay at \$20 or even more than that, but men who are content to milk any kind of cows and raise heifers from them from any kind of a bull has not got dairy cows in his herd unless they get there by accident, which does sometimes happen.

One effect that the high price of feed is going to have on the dairy business is to force discrimination in the selection of cows and to bring home to some the importance of keeping records and knowing what the cows are doing. I know when a person has an unprofitable herd the question is: "What shall we do right now?" And my answer is: "Get busy at once with the scales and test, coupled with good judgment, let out those cattle that are losing the most money forthwith, save the best ones, give them individual attention and breed better; by using a bull of known merit the result will be, in a short time, a class of heifers that will raise the average of the herd to the point of satisfactory profit.

Already many herds have been profitably culled, and while I have heard of dairymen selling their cows on account of the high price of feed, investigation has shown that many of the cows that have been sold are the culls and the herds without them are making a better profit on high-priced feed than would have been possible with the herds with the culls in them on feeds at a much lower cost. The result of high-priced feeds on the dairy business is going to be better dairying.

TWO WAYS OF LOOKING AT IT

A farmer of the olden type was inveighing against cream separators. "I tell you they ain't no good!" he said. "But," replied his more scientific neighbor, "they do save cream. You can make more butter. Anyone will tell you that." The farmer was not to be convinced. "If I wanted to get more cream," he said, "I'd rather get another cow."

CONSIDERATE

Clarence—"I passed by your house last night."

Dorthy—"I thank you."

Farm Loans

CURRENT RATES
FAVORABLE TERMS
LIBERAL AMOUNTS
ALWAYS IN FUNDS

MILLER & VIELE
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SALT LAKE CITY

Insure Your Live Stock

against death from any cause

THE HARTFORD WAY

low rates no assessments

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To Buy

FARMS

To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

FARMS AND ACREAGE

Farm for City Property

180 acres of choice land with fine water right, located in Box Elder County. Good soil. All tile-drained. First class improvements. All in cultivation—alfalfa, sugar beets, potatoes, and wheat. Full farm equipment. Will trade for good Salt Lake income property and small cash payment. What have you?

480 acres, or any part thereof, carrying full water right, located near sugar factory. A bargain at \$50.00 per acre.

Land in Flowing Well District

If you are looking for a good sage brush land in a district where some of the largest and best artesian wells in the State are located, consult us regarding a few bargains that we have. Excellent flows are struck at a depth of 200-300 feet. Such land with wells is worth \$100.00 an acre. Write us for particulars.

Farms for Good Lots

40 acres with full water right to trade for first class lots in Salt Lake City's best subdivisions. Will consider nothing but first class property.

Farmer's Sons

If you are contemplating leaving the old farm and casting about for a good piece of land that will rise in price as well as produce big crops, submit your wants to our Farm Department.

We have some choice land with A-1 water that will satisfy you.

ASHTON-JENKINS CO.

47, Main Street,
Salt Lake City.

OPPORTUNITIES IN FARM LANDS

We have at Elberta, Utah, 50 acres of the finest farm and garden land in the West. It is a very suitable place for a man who wants a small farm at a reasonable price. Well adapted to raising any of the farm products, garden truck, alfalfa and beets. It is located on a railroad giving excellent shipping facilities, close to two mining camps, affording a fine market for garden vegetables, and is also near good schools. Just the kind of a place you will want. Prior water right at \$1.00 per acre if used. See us about this place and let us give you further details.

Another opportunity for the right party at Elberta, Utah, is a 50 acre farm, suitable for the growing of alfalfa, fruit, beets, grain, garden truck or any other farm products. The best kind of soil, with good water right at a reasonable rate. This property adjoins a good school and is located on a railroad. Will take \$3,750 for this place, with suitable terms for payment. This is a real buy for the man that wants a small farm at a good price.

For \$75.00 an acre you can buy 50 acres of Elberta's fertile land, with prior water right at \$1.00 an acre. What do you think of this buy. If you are looking for a small farm at a low price, investigate this further. We will be glad to furnish you with more information.

We are dealers in farm lands. Write us your wants.

W. C. ALBERTSON

604 Dooly Bldg.
Salt Lake City

Reliable Farm Bargains

WILL YOU FEED, FINANCE OR FIGHT?

Have you stopped to consider what you are going to eat this winter or what you are going to feed your animals? The whole world is crying for foodstuffs. We have on our lists at the present time some of the best farms we have ever offered for sale. We haven't raised the price. We are in a position to give you a first-class farm, all planted this year, for a small payment down and terms of ten years on the balance.

40 acres in the north end of Cache valley, one-half mile from the town and school. Joins the railroad station. Small house, stable and other outbuildings; family orchard; soil black loam; part of the land subirrigated, balance irrigated from the canal. Price \$4,000. Part cash and balance on good terms.

80 acres in Cache valley, all watered from the canal. Adjoins the state highway, ½ mile from school; city water passes the place. This land can be had for \$125 per acre, 10 per cent of the purchase price and ten years on the balance at 7 per cent interest.

We have another tract of 300 acres in the same locality that can be cut into 10, 20, 40 or 80 acres. This property is all under the canal, right near the railroad station and school, also a nice little town. City water available for the entire tract. The best black silt soil. Most of it in alfalfa that will cut a big crop this year. We can sell you this property for a small payment down, giving you ten years on the balance.

In southern Idaho we have, on the main line of the Oregon Short Line railroad, right near a good town, under a first-class canal system, a number of 40, 80 and 160-acre tracts for sale.

We can suit you as to location, improvements and lay of the land.

We can sell you a farm, all planted to alfalfa, all ready to plant to sugar beets or potatoes, or one that is in sagebrush.

This land ranges from \$60 to \$100 per acre, including improvements. Ten years to pay at 6 per cent interest.

A number of weeks ago we took over the entire holdings of the Keystone Steel & Wire company of Peoria, Ill. These lands are situated in the Bear River valley, right adjoining the town of Tremonton, one of the nicest little towns in northern Utah. This land consists of 40, 80 and 160-acre tracts, with first-class homes and improvements. Prices range from \$115 to \$200 per acre, according to the location and improvements. It can be sold for one-fifth down, 20 per cent the 1st of January, the balance in ten equal annual payments. These prices are 25 per cent lower than the actual cash value at the present time.

720-acre cattle ranch; 300 acres in hay and grain; some pasture. All fenced. First-class water right. Improvements consist of an 8-room house, good stables and other buildings; 45 head of cows, 20 head horses, all necessary machinery and implements. Situated four miles from the town of Deeth, Nevada, right on two transcontinental railroads. Can be had for \$30,000. Will consider \$13,000 worth of first-class Utah farm property in exchange.

On 14th South, just off the 5c car line, we have some beautiful one-acre tracts for sale. \$450 per acre, \$45 down at time of purchase and ten years on the balance at 7 per cent interest. This is a good buy, and if you are looking for somewhere to raise your foodstuff, this cannot be beat.

We have on our listings, and own ourselves, at the present time several million dollars' worth of first-class property. We feel sure we can suit you as to location, price, terms and improvements. If you are desirous of buying a farm for yourself or for your sons, get in touch with us.

We exchange farms for Salt Lake City property.

Kimball & Richards

"Land Merchants"

56-58 Main Street
Salt Lake City, Utah

Phone Wasatch 963
FARM AND RANCH DEPARTMENT

IDAHO RANCHES

These ranches have access to range for stock and have the finest soil in the state of Idaho—Irrigated, 160 acres, 3 miles from county seat, all part hog tight fenced, good comfortable house, barns, other buildings, 120 acres under cultivation. Price \$7,500. Can make good terms.

320 acres, all good irrigated land. This has been used as cattle pasture and is in good shape to plow and work. Has good water right and good fences. 100 head of yearling heifers to calve this coming summer. Price \$14,500 with good terms.

160 acres, 6 miles from county seat, all cultivated, 60 acres wheat, 5 acres broom grass, balance grain land, well fenced. Three room house and extra lumber, all machinery, three horses, five cattle. Place located close to school and open range. Price complete, \$9,000. Terms \$4,000 cash, balance at 6 per cent interest, five years time.

160 acres, three miles from county seat, four room house, large barn, fenced, 25 acres grass, 30 acres alfalfa, 50 acres fall grain, balance being plowed. 22 grown cattle of which 21 are cows and heifers. All machinery, mostly new. Price only \$7,500. Terms \$2,500 down, good time on balance.

FEDERAL LAND CO.

Ogden

Utah

FOR SALE

640 acres with 168 acres wheat, 50 acres alfalfa, well, fence, 6 horses, harnesses, implements, etc.

800 acres, 320 pasture, 235 acres in wheat and some horses, etc. Will sell part or all. Price and terms reasonable. For further information, write

N. E. MILLER
439 So. Main, Logan, Utah.

FREE FARM LANDS

The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our Committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah.

FOR SALE

In Boxelder County, 50 miles from Brigham City, 960 acres of land, 800 under cultivation, 400 in fall wheat, about 40 alfalfa, 12 head horses, harnesses, machinery, buildings, well and equipment. Price and terms reasonable. For particulars write

MILLER BROS. FARM CO.
394 S. M., Logan, Utah.

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

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TWELVE HEAD JERSEY COWS
PRODUCING FROM 250 TO 400 POUNDS
FAT PER YEAR. WILL BE SOLD
AT FARMERS PRICES.

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Springville

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Hatching Eggs 20% Off.
A few White Leghorn Breeders at
half January prices.
BATES & SONS
GUHAMA FARM
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GROWING OF BEETS IS BENEFIT TO YOUR FARM

Besides providing an absolutely cash crop, a certain market, the growing of sugar beets, the Utah and Idaho, also provides one of the best means of fertilization through crop rotation. Agricultural experts agree that root crops are essential in good farming—sugar beets provide the safest, surest, cash producing crops of its kind.

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S. C. Brown Leghorn eggs for hatching from bred to lay strain. Free range stock. Prices: 75c for 15; \$3.75 for 100 delivered. Fertility guaranteed.—D. Stratton R. D. 1, Box 207, Provo, Utah.

FOR SALE

Single Comb White Leghorn Hatching Eggs from bred to lay stock. Our thirteenth year Prices right.

MODEL POULTRY FARM
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YOUR OPPORTUNITY

200-290 Egg. Early Maturing, Winter Laying Leghorns. Anconas, Reds; W. Barred Rocks; W. Buff Wyandottes; Buff Orpingtons. \$3-\$10 yearly profit per hen. During May and June: Eggs half, chicks fourth off. Few pens all breeds, at bargain to make room. Guarantee you profit with feed high.

J. BEESON

Pasadena

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DUROC-JERSEY BOAR PIGS

that are registered and from the world's greatest families being grandsons of the \$5,000 DEFENDER and the \$2,000 ILLUSTRATOR. Spring pigs \$15.00 each and boars of serviceable age \$35.00 each, that are CHOICE.

Satisfaction or Your Money Back.

EDWIN BRICKERT

Beaver

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FOR SALE

Two young pure-bred, registered Percheron Stallions, between 2 and 3 years old. Well bred and good individuals. Both took ribbons at the State Fair last fall. For sale cheap. Also a span of young Percheron Mares. Address

PARLEY P. PARRISH
R. D. Box 53, Farmington, Utah.

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BILL. WRITE US. PACIFIC COAST
SAWMILL COMPANY, Portland, Oregon.

RAG APPLE KORNDYKE 13TH

BULLS FOR SALE

From A R O dams which we are offering at reasonable prices, write us.

NELSON BROS.

Richmond

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SHORTHORN BULLS

Two choice Shorthorn Bulls for sale. Year old and nine months. If you want a good one here is your chance, otherwise don't answer.

DR. OTTO NIELSON

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WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

Prices at your post office:

100 Butter Wrappers.....\$.90

200 Butter Wrappers.....1.25

500 Butter Wrappers.....2.00

1,000 Butter Wrappers.....3.00

Check or money order must accompany order.

BARGAIN

One 28-inch Minneapolis Separator with self-feeder and wind stacker, and one gasoline tractor at a sacrifice. Both in good condition.

SAM PETERSON & SONS CO.,
147 S. State St., Salt Lake City, Utah.

SELECTING THE STALLION

One of the first considerations in the breeding of live stock is the selection of the proper sire. The influence of the sire is pre-eminent because he directly affects a greater number of offspring than does the single female. There can be no improvement or grading-up process by the use of scrub sires. Horse breeders should recognize the fact that it is not a paying proposition simply to breed mares to any stallion that may be available. A sound, pure bred stallion should be used if best results are to be obtained.

The stallion selected should conform as closely as possible to the breed and type of the mares that are to be bred. Stallions of pure breeding are, by virtue of their unmixed ancestry, possessed of greater prepotency than are grades or scrubs, and will therefore invariably impress their offspring with their breed characteristics and individual merit.

A low service fee is too often the deciding factor with many farmers and mare owners in the selection of a sire. A low service fee ought never to be a temptation but rather should be taken as a warning. A low fee is usually a sign of an inferior stallion. Colts from inferior or scrub sires will sell for much less than those sired by the sound, pure bred stallion.

A certain farmer had for several years been breeding his mares to a grade stallion. He finally decided to patronize a pure bred. Some time after he held an auction sale. Yearlings, two-year-olds, and three-year-olds, all by the grade sire, sold for \$37, \$55, and \$76 a head respectively, while weanlings from the same mares, sired by a pure bred stallion, averaged \$101 each.

In another instance, it is reported that a company of farmers purchased a two-year-old purebred stallion. He was considered so good that the service fee was placed at \$25-\$10 more than any competitor. A three-year-old gelding sired by him was sold to a dealer for \$625, and not one went for less than \$225. A pair of grade mares sired by the same horse was sold to a man for \$750, while a colt not over twenty months old was sold at public auction for \$700.

These are not isolated cases but are given simply to show the greater profits that result from the use of pure bred sires. Sound, high-class horses

Duroc Jersey Boars

Boars chuck full of Grand Champion Breeding. Bred the same way as our Utah State Fair Winners. We have a great lot of top spring Boars and are offering them at bargain prices. Every Boar guaranteed to please or money refunded. Write us today.

RICHARDS LIVE STOCK CO.
Virginia Idaho
The West's Best Durocs.

are the ideal farm power, and good mares bred to pure bred sires of the same breed and conformation pay good profits, not only in the colts they produce, as has been shown, but also in the labor they performed by the inferior and scrub horses of the country is enormous. This expense can be greatly reduced if farmers and mare owners will breed their mares to the right sort of stallions and produce the kind of horses the farm requires and the market demands.

The time to begin is now. All inferior purebred colts and all grade and mongrel colts should be castrated. Only the best mares should be retained, and these bred to sound pure bred sires. One of the best ways to stimulate interest in the breeding of better horses is to arrange to hold a Fall Colt Show. A string of promising colts will afford striking evidence of the result of breeding the best, and prove a splendid advertisement for the community.

CHICKEN FAT VALUABLE IN COOKERY

Do you throw away the body fat of poultry—big layers of clean, sweet, yellow fat around the gizzard and found elsewhere around the intestines of the chicken? If you do, say specialists of the United States Department of Agriculture, you are throwing away fat which French housewives consider the finest of fats for making cakes and especially puff paste. In certain seasons in New York and other big cities, this fat is so highly esteemed that it brings as much as \$1.10 per pound. So great is the demand for this fat that many people make a business of collecting it from butchers and others who dress poultry before delivering it to customers. Housewives would do well to insist on having it delivered if they buy their poultry dressed. By using chicken fat in cooking they can cut down the amount of fat they must buy for that purpose. To prepare it, try it out in a double boiler, or other vessel set in hot water, until the fat just melts away from the tissues and can be poured off. This fat becomes rancid easily and should be kept cool and covered like butter and used in a very few days. Chicken fat, like goose fat, may be used for shortening in cakes such as spice cake where the seasoning used will mask any flavor which the fat might have. It can also be used not frying the chicken itself or other meats and for warming vegetables, etc.

DAMAGES SURE ENOUGH

"Hogan's cow bruk into the strawberry patch this mornin', sorr, an' it's heavy damages we sh'uld git from him."

"It's no use, Patrick. He'll be sure to swear it was somebody else's cow."

"The devil a bit, sorr; he can't. Oi shut the baste in there fur iverdence."

—Exchange.

How the Crop Volume May Be Increased

E. W. McCullough.

Since the Government has furnished figures to show what our food reserves are, in the raw state, as coming from the farm, it has had no difficulty in securing co-operation from all classes in urging everywhere increased planting and making it clear that labor in connection with agriculture at this time is as truly a patriotic service as going to the battlefield.

Strange as it may seem, however, only passing interest has been taken in the supply of efficiency of tools and equipment in the hands of the farmers at this time with which the work must be done. The farm equipment industry, which is one of the largest single lines of manufacture in the country, has for years kept pace with the demand, and competition has so quickened the wits of these manufacturers that today this industry leads the world in producing not only the greatest volume but the most labor-saving machinery found anywhere throughout the world.

The public, however, are not generally aware of the fact that the farmer, who has prospered so universally as a class, has for several years been turning his attention to comforts and luxuries, perhaps forgetting for the moment his workaday equipment. Then, again, as he is a poverbail bear in purchasing his supplies, since the advent of the war he has taken the position that the advances which have been made in the prices of farm equipment, because of increased cost of production, were only temporary and that by keeping out of the market for a time, these prices would recede to the old basis. As is generally known, just the reverse has been true, for the manufacturer has had to contend with a constantly increasing market for his

materials and also advances in the cost of his labor and almost every other item of business expense common to manufacturers, so that corresponding advances have been necessary in the selling prices of agricultural implements.

It is now nearly three years since the war began, and by investigation it has been found that in many instances, the farmer's operating equipment is more nearly worn out than ever before, and much of that which is still serviceable is of a character that does not economize in labor as do the more modern and up to date kinds. Our Allies passed through an experience which we could profit by, for in response to the alarm of war, the demand for munitions seemed paramount and it was nearly a year before they realized that the food problem was the greatest they had to contend with and then they began a hasty scramble to rearrange their plans and systems to meet it. The time lost by this delay has not only proven serious but undoubtedly would have been vital if we had not joined with them in the struggle.

In order to do our part satisfactorily, we shall have to move rapidly, for agriculture, unlike manufacturing, is seasonable and as with them and tide, waits for no man. The manufacturers of implements and farm machinery have suffered serious delays in securing materials during the past three years, owing to the congestion of orders at the mills and in transportation, therefore, the production has been below normal. This year these delays have been greater than ever before and had it not been for some of the railroads placing agricultural implements on the pre-

ferred list where embargoes existed, considerable of the country would have been without adequate equipment to put in this year's crop.

It is fortunate that the manufacturers have had the capacity to meet the demands upon them up to this time, but they are now confronted with a most serious condition in looking forward to the manufacture of implements for use this fall and next spring, because of our Government requiring extraordinary amounts of material for war purposes, which naturally must be given precedence over all ordinary demands.

Plowing in the Southwest for fall will follow the June wheat harvest and will gradually progress with the season to all other territory. Consequently, the manufacturer must order his materials now and have assurances of deliveries, or it will be impossible for him to plan his production intelligently. If tillage implements are not provided when needed, the passing of the season renders them useless until the proper time again arrived and in this respect the situation with these manufacturers is different than that of most other lines.

Efforts have been made to bring these important facts before those in whose hands rests the matter of determining the proper apportionment of materials to those industries which should have preference for the protection of our food supplies and the welfare of the people in general. It is hoped that the seriousness of the situation will be so realized that early action will be taken to prefer the necessary materials and labor used in the construction of labor-saving farm equipment, and further that the shipments of this material, not only in the raw state but when completed, will be permitted to move to its destination quickly and without an unnecessary delay.

This is not an instance of an industry asking to be preferred over another, for these manufacturers have already tendered their plants to the

Government, to be used as directed, but it is believed in this present emergency that they can render more efficient service in turning out these tools suitable for agriculture than if they were required to produce munitions or other war equipment.

It is hoped therefore, that the seriousness of the situation may arouse general interest in this contingency and that all who are disposed to do their bit may see here an opportunity for rendering help. Our farmers, our business men, our agricultural colleges, and all organizations who realize the importance of increasing food supplies may with propriety write to our constituted authorities relative to this matter, until by reason of volume of interest, steps may be taken which will provide the desired relief.

A short time since we did not consider this was our war, but today it is generally realized as our greatest responsibility and that we must move and more quickly.

QUESTION AND ANSWER

Utah Farmer:

I have a small piece of land which has been planted in garden truck for many years, and for the last eight or ten years it has had no manure or other fertilizer. The soil is a sandy loam. If I am unable to get some manure, do you think it profitable to purchase commercial fertilizer, and if so what would be the best to get under these conditions?

Kindly answer through the Farmer.
Yours truly,
Subscriber

Answered by F. S. Harris.

It is impossible without knowing more about your soil to advise what fertilizer to use. In general farm manure is better to use than commercial fertilizer and I should advise you to secure farm manure if you can.

Excursions East

via



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OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH

VOLUME XII, NO. 43

JUNE 2, 1917

A THOROUGH SYSTEM OF CROP ROTATION

By Mark Austin.

Beneficial to the farm and the farmer, and as the season is getting late, we desire once more to earnestly call the attention of the farmers to this very important matter.

A system of crop rotation on a twenty-acre farm may be established as follows: Eight acres of beets, two acres of corn or potatoes, two acres of wheat seeded with alfalfa and eight acres of alfalfa. The two acres planted to corn or potatoes should be on lands where green alfalfa has been plowed under as heretofore outlined, which will furnish excellent rich sugar beet land for three or four years thereafter, by putting on a little manure the last year it is in sugar beets; then the two acres of land that has been in sugar beets the longest may be planted to wheat and alfalfa, and two acres more of the oldest alfalfa plowed under each year for corn and potatoes, to follow with sugar beets for four years. If this plan is followed it will mean four years sugar beets; one

year corn and potatoes, one year wheat seeded with alfalfa and four years cutting of hay. What little manure there is produced upon the farm may be put on the beet land the third or fourth year that it is growing beets.

This system of farming will help to eliminate the weeds, thoroughly enrich the soil to increase its production from 25 to 30 per cent above the average yield at the present time, and make the farmer rich as well as the land.

If a farmer has only ten acres of farm land, then he could plow up one acre of alfalfa each year for corn and potatoes or a proportionate amount in proportion to the size of his farm, let it be great or small. This method, if adopted, will solve the problem of fertilizer, one of the most important things which confronts the American farmer. It will also keep his soil in a good, healthy condition and eliminate plant diseases in the soil.



One of the most essential tasks in producing good crops is thorough cultivation. A good practice is to disc close to fences and between trees and plant oats or grass for feed. This also helps to kill the weeds.

A PATRIOTIC DUTY---BUY A LIBERTY BOND

Dry Farming Possibilities in Box Elder County

By J. W. Paxman, Extension Specialist in Dry-Farming for the Utah Agricultural College.

Area and Extent.

In area Box Elder County ranks fifth in the twenty eight counties of the state comprising a total of 3,250,624 acres. It is located in the extreme north western corner of the state and bounded on the east by the western spur of the Wasatch mountains.

It is foremost of all the counties in the number of acres owned and upon which taxes are paid. The latest statistics show approximately 2,000,000 acres so owned and taxed. This is by far more land than is taxed in any other two counties and over 100,000 acres more than all lands taxed in six important counties in the north, viz; Salt Lake, Davis, Morgan, Weber, Cache, and Rich. If we deduct one-fourth the total area for waste lands covered by the Great Salt Lake and Salt Desert in the southern portion we have fully four-fifths of the remaining lands occupied and taxed. Excluding 200,000 to 300,000 acres of these the remainder can be designated as agricultural lands and capable of being farmed and of producing crops.

A precursory survey shows that about 1,250,000 acres might be profitably dry-farmed in one way or another if proper methods are employed. The county is primarily agricultural and the outlook would seem to justify the prophesy that it will some day be nearly equal to, if not indeed, the foremost county in the state in production of agricultural crops.

The great Bear River Valley and the fertile farms on the east form a base for agricultural expansion, and the gradual development of the dry-farm areas, will work well into the general scheme and put Box Elder County in the front rank for a well diversified and advancing agricultural growth.

History.

Dry-farming is by no means a new industry in the county, as it was in the eastern part of this same county that dry-farming was first practiced in Utah, though the proper methods at that time were little known. Simultaneously with the development of dry-farming in Cache Valley farmers met with equal success on the fertile spots at Fielding, Collinston and vicinity and later at Tremonton and the west. Very encouraging results have been obtained in these sections for many years, but it has been only recently that the movement has been extended into the middle and western parts of the county. However of late years much interest has centered in the Blue Creek, Promontory, Curlew and Park Valley districts and a great deal development work has been done, with some successes and far too, many failures, due perhaps, not to the fault of the land or to nature's endowments, but rather to two vital factors, which play so important a part in successful farming, namely, equipment and methods and of which we shall find more to say in this report.

Dry-Farming Districts.

There are six distinct sections in the county each more or less vitally different in its general characteristics and demanding modified systems of farming. They are the East Side, Blue Creek, Promontory, Curlew, Park Valley and Grouse Creek, each of which will be reported on separately.

East Side

This district comprises the sections known as Collinston, with 10,000 acres, Fielding, with 57,000 acres, Bear River City with 30,000 acres, and Bothwell with 10,000 acres, of non-irrigated lands, nearly all of which is under cultivation and are producing splendid crops. Much of the land near Bear River City is shortly to be brought under irrigation. The climatic conditions here are usually favorable for all fall and spring crops, heavy snows covering the ground during the winter months and generous rains coming during the early growing season. The

soil is fertile and responds well to cultural methods. Weeds seem to be the menacing thing in this section and the clean fallow ought to be more closely observed. While the yields are in the main satisfactory they could be largely increased by the selection of better seed and keeping the weeds down. A little valley called White's 6 or 8 miles west of Portage, comprising about 5,000 acres, is included in this district.

Blue Creek.

The Blue Creek district comprises the Blue Valley of about 112,000 acres and adjacent country known as the south end of Little Pocatello Valley of about 200,000 acres, Hansel or Salt Well Valley on the south with 38,000 acres, Junction Valley with 25,600 acres and carries with it a variety of conditions. In the Little Pocatello valley and the northern part of the Blue Creek valley the soil is rather dark, being blue clay and black mountain soil, covered with heavy growth of mountain grasses and thrifty black sage indicative of a rich fertile soil. It is of a fine texture and has the "body" to retain moisture. There seems to be no limit to its depth—no concern as to the capacity of the soil for holding moisture. In general it is rather heavy and inclined to bake or puddle if not handled right. The quality of the land here is not the limiting factor for we can depend on these lands producing generous crops, if only all other elements are abundant and conducive to plant growth for cultivated crops. The water question is one of the serious problems, as up to date it is not plentifully in evidence. If obtained, wells must be dug or driven for a depth of 150 to 200 feet, and then the supply seems to be meager. The rainfall, while not so plentiful as some have anticipated, is sufficient to produce profitable crops where methods are followed to conserve all that Nature gives during two years for the one crop. Crops are reported of from 25 to 40 bushels of wheat per acre. There is some danger of frosts in this section on account of the cold snaps that frequent parts of the valley in June, catching the grain in the flower or milk stage. Since crops have been frosted several times it is a problem worthy of serious consideration.

The danger can be largely overcome by pasturing the grain until about May 20 and holding it back so as to keep the head well in the boot at the time of frost danger. The plant will not be in the tender stage then and will withstand the frost. Horses and cattle can be used for pasturing, but sheep are better. The grain should be grazed pretty closely to the ground, then it will make a more vigorous growth and stool better, and in all probability will give bigger yields because of such pasturing, besides being the means of saving the crop and giving values in meats.

It is estimated that 100,000 bushels of grain were grown on the Blue Creek valley in 1915, so that some progress has been made in getting much of the land under cultivation.

Greater progress could have been made, but from the fact that the major portion of the settlers were handicapped with lack of funds and poor and inadequate equipment. Being limited in means it seemed imperative to them to have quick returns, so they have tempted Nature and tried for a crop every year on the same ground. This has accounted for poor yields in most cases.

All through this vast stretch the Promontory-Curlew Land company own, or did own, every odd section of land and have exploited them to home-seekers. Under ordinary conditions dry farming in Utah does not give quick returns and a wrongful policy has been pursued in placing families with very limited means upon these

lands and that took with no agricultural advisor to direct their movements. As a result in nearly all these districts, dry farming has been a struggle, and is just beginning to give satisfactory returns.

The Hansel or Salt Wells valley adjoining Blue Creek on the west, was 38,000 acres, practically all cultivable. About one-fourth of this is now under the plow. These lands are some less fertile than those in Blue Creek, with some less grass in evidence. Farmers say 50,000 bushels of grain were shipped from here in 1915.

All the uncultivated lands in the Blue Creek district produce well in mountain grasses, which provide excellent grazing for horses and other stock and the small portion covered by the more abrupt hills, that cannot be cultivated can be utilized to good advantage for pastures. Although the principal part is rolling and mountainous in character, the most of it can be cultivated and put to crops. The section is adapted to such crops as wheat, oats, barley, potatoes, and in some selected spots alfalfa. Better methods would almost double the average yields and make the country more prosperous and prominent.

Promontory

The area of this district is about 4x12 miles and joins the Blue Creek and Hansel valleys on the south and is not unlike the Blue Creek country in the character of its lands. The country is rolling, covered for the most part with a heavy growth of sage brush, the soil being coarse to fine, and is pliable to the plow, making it easy to operate. It can be said, also, that the lands are not at fault in general, if crops are not forthcoming. Its 30,700 acres will some day play a prominent part in adding to the agricultural wealth of this section. Little progress has been made owing to the operators being limited in means and too strong a desire for quick returns. The rainfall here is

limited and a yearly cropping should be discontinued and the clean fallow system should be religiously adhered to, otherwise failures are likely to continue. Some of the very crudest methods have been observed here, resulting in a crop of 88 bushels of wheat on 110 acres. The great need for this district is better methods. The ground lies groaning for a good tilling. If given a chance and treated right it will do its part. If plowed right and the brush gotten out of the way the farms will respond with better yields, as has been shown with a yield of 42 bushels of wheat when the farmer favored his farm and treated it right.

This is said to be a cold section, especially in the higher elevations near Promontory station. It would be well to follow the grazing or pasturing method here also and cheat "Jack Frost" out of his game. Where the raw lands are fenced against stock a year or two they produce well in grass. Alfalfa when properly cultivated produce one to two tons per acre if choice spots are selected for its planting.

Booth valley on the east of Promontory mountain is 8x20 miles and is placed in the Promontory district. There is little activity at present, but it has a promising future. One hundred thousand acres is no small area, and some day may make a tremendous showing and establish an enviable reputation. We cannot say much on this section just now, not having visited it, but men tell us that the larger part of this land can be successfully farmed.

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"And if you don't eat it today it will be tomorrow's."

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VOLUME XII.

LEHI, UTAH, SATURDAY, JUNE 2, 1917

No. 43

Important Factors In Dry Farm Plowing

By J. W. Paxman, Extension Specialist in Dry Farming for the Utah Agricultural College.

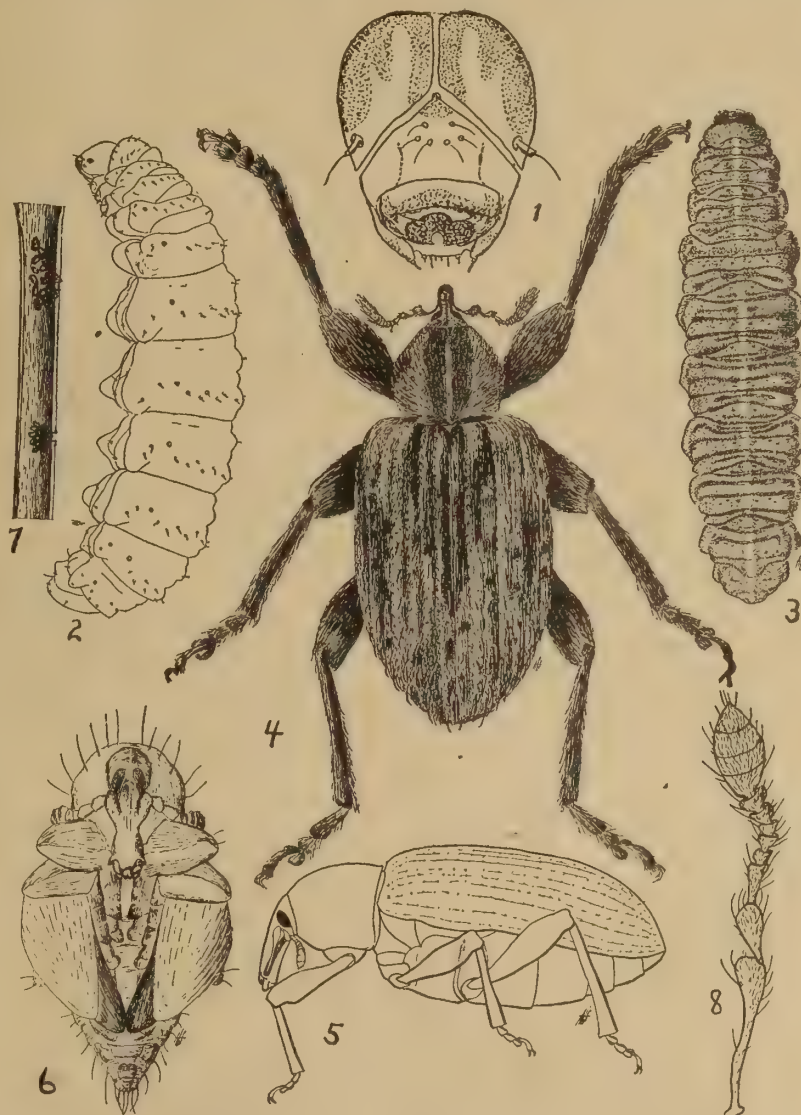
We cannot do successful farming without employing cultural methods. In ancient days the methods of land culture were very crude, but improvements have been made from generation to generation as the world grew older and new discoveries were made. In all ages the problems of handling the soil to make it produce in its strength have occupied the attention of a large portion of the earth's inhabitants. It is a responsibility the human race cannot ignore or get from under unless we go into barbarism and forego all civilization and progress.

The Infinite gave the edict to the first man that he should "till the ground from whence he was taken." It would appear that since the earth mothers every living thing of the vegetable and animal kingdoms, man is under obligation to pay homage to her and to court her in the ordained way of "tilling the earth," if she is to continue in her glorious mission of producing every essential thing for his material wellbeing and development. The agricultural experience of the past has fixed upon our minds the necessity of plowing as the basic and most important operation in soil culture as applied to the farms, in general. This article will deal with plowing as applied to dry farming from a practical point of view.

Plowing Brush Lands

It is much better to remove all the brush possible before attempting to give first plowing, as it insures a better job of work and less trouble and expense in the long run. Since plowing provides the foundation for successful crops, so far as man's duty is concerned, a study and care should be exercised to have it done right and a proper base laid for every legitimate hope of the future. A good plowing consists in having all the ground, to a proper depth, disturbed and moved in such a way as to change entirely its position and at the same time mix it and pulverize it, so that each particle can have a new action of the elements and become practically re-vivified with life as soon as Nature provides the conditions for such life. A so-called "cut and cover" process does not meet the requirements for future success, but limits the action of the elements in their process of vitalizing the soil. The object in all cultural methods is to provide a home with wholesome conditions for the birth; nurture, growth, thrift and maturity of the plant, and the elements necessary for its subsistence, and the plowed surface is that home, to all intents and purposes, and if we expect progress to be made the home must be congenial and conducive to the development of the plant from its very beginning, making available every need to facilitate its growth. Ripened fertility with plenty of moisture are to the plant what food and water are to all animals and are absolutely necessary to sustain life in the plant kingdom, or the home becomes uninhabitable. It depends upon the supply of these in the home, as well as other elements, such as

warmth, air, sunshine as to how many plants can be sustained in a given surface area. If the home be poorly supplied, there is a forlorn aspect ahead and a strenuous struggle sets in for an ultimate survival. The store house becomes depleted early in the game and the product is disappointing. The plant family is weakened,



Greatly enlarged drawing of the various stages of the alfalfa weevil. Brush dragging or thoroughly harrowing the dry ground after the alfalfa has been cut at the time the alfalfa weevil commences its ravages is advised by the Utah Experiment Station as the most successful practice to prevent serious damage. Young alfalfa withstands the attacks of this pest much better than the older fields.

diminished, struggle-worn; many are exhausted and few survive and come to an early and stunted maturity. It is a simple but forceful analogy of human life, yet how few have recognized it and acted upon it when they do the acts—the most important of all—that fixes the base and lays down the rule for the measure of success that is to follow. If we could but see what processes go on in the soil to provide the essentials for the well-being of the plant, we would be more particular and exacting with our work in laying the foundations for the anticipated harvests. We all agree that the first plowing is more or less stub-

Storing Food For Family Use

By F. S. Harris, Director Utah Agricultural Experiment Station.

In these war times when a scarcity of food is so near to our own doors, many are reminded of the wise advice given by the leaders of the Utah pioneers. In those early days before the production of the land had reached its present degree of certainty and before the facilities for transporting food great distances were developed, it was necessary for each family to store supplies to last from one harvest to another; starvation many times faced those who did not prepare for the fu-

ture. The leaders strongly advised all to be ready for a number of years of shortage.

Many of the frugal men of those early days have continued to the present time the practice of buying at harvest time enough flour, beans and other staple foods to last the family till the next harvest. Some have kept two or three years of supplies on hand all the time. Most of the people, however, have drifted into the habit of living in a sort of hand-to-mouth fashion, having only sufficient food on hand to last a day or a week and being entirely at the mercy of dealers.

Without considering the relative merits of these two methods of purchasing food during normal times, all must agree that in the present world crisis those who have prepared for the emergency are in a much better condition than those who may become victims of a food shortage. No one knows how long the war will last nor how long the balance in the food supply will be disturbed after the war is over. Of this we are certain: Today millions of people in the world are under-nourished, and if the war continues many more will have occasion to know what hunger means.

With millions of the world's food producers engaged in actual warfare, with millions more working to furnish the fighters with munitions and other war supplies, and with transportation and manufacturing facilities reserved for army purposes, some will have to suffer. The first to suffer will be those who depend for each day's supplies on a delivery from the grocery store. The far-sighted individuals who have taken the precaution to store the necessities in advance will be the last to suffer.

Hoarding food for speculation in this great crisis cannot be too strongly denounced. Those who would make merchandise of the nation's distress or who would extort from the poor high prices for commodities that have been withheld from the market till a fabulous price could be obtained are altogether lacking in true patriotism.

The storing of food to meet the actual needs of the family is, on the other hand, an act of the highest patriotism. It tends to equalize the price of food throughout the year and reduces the likelihood of a food shortage in the country. If all the families would store a good supply of the necessities while they were abundant or while traffic conditions permit, the railroads would be free to serve the purposes of actual warfare if an emergency should arise. If none of the people have provisioned themselves in advance, the railroads will be kept busy supplying immediate wants during critical periods when they should be free to serve the government.

It is believed, therefore, that family welfare, national duty and patriotism call on every family in the land to conserve most carefully all possible food and to store sufficient of the necessary foods to carry over what might be a period of very sore national distress.

Now that the season of production is here, let every family take the opportunity to supply itself with food for the season when there may be no surplus. Storage in the home is much better than storage in the bins of the speculator.

born, and in cases where the equipment is inadequate or in poor condition the job is very discouraging. It pays, however, to sharpen the plow share, tighten up the bolts and make the plow frame strong and rigid, repair the harness, and keep the horses in good flesh, and to do the plowing right, the plow should cut every inch of the ground and go down from 7 to 10 inches—depending on conditions—deep enough to cut under the crowns of all roots and cut them off clean. How often do we see standing brush after the first plowing. This should not be—every one should be cut and

(Continued on Page Fifteen)

DAIRYING

THE BASIS OF MILK VALUES

By W. H. Underwood.

Are we not over-emphasizing the value of the fat content in milk and too largely disregarding the importance of the other food constituents? In estimating the value of feeds for cows the amount of protein and carbohydrates is taken as the basis of values and the small amount of fat is hardly mentioned, but with milk the fat alone is about all that is considered worth reckoning. Yet milk is as nicely balanced with all of the food elements as any combination of grains that we can mix and the fat is about as small in proportion to the others as it is in the grain and forages we feed to the cows or in the food we set to our tables.

The whole milk entering into human consumption is of large proportions. In the city milk trade, is the condensaries, in cheesemaking the whole milk is used and only in buttermaking is the fat the chief factor. And in buttermaking the separated milk, the food elements of the milk with practically only the fat taken out, is of high value for feeding. The dairyman who disposes of his home milk finds difficulty in finding anything on which his calves will thrive, but calves will do very nicely on separated milk with a little flaxseed or some form of calf feed added to replace the fat.

But in practice the fat content of milk is taken as the only element in estimating the value of milk. In cities, condensaries or cheese factories, where the whole milk is used as well as in buttermaking, the Babcock test is the only standard. This is all right as far as it goes, but does it go far enough to measure the true value of milk? Why should the protein and carbohydrates be of less corresponding value in milk as compared with the value of the fat than in the

concentrates we feed our cows or in other foods we set on our tables?

The fat is not an invariable factor in determining the value of milk any more than it is in other foods. Not long ago I tested the milk from two young Jersey cows. One gave milk with considerably more cream than the other and the owner thought the milk containing the most cream was richer than the other, but the test showed that the milk from the cow yielding the larger amount of cream tested 5.2, while that from the other tested 6.2. In other words there was apparently a large variation in the solids other than fat given by these two cows.

One of the mysteries of the cream separator is that the fat in the cream varies while the separator has been set and operated without change. With different cows and with the same cow from day to day it is known that the fat in the milk varies, and while I am not aware as to any analyses of the other contents of the milk having been published, yet it is fair to presume that these differ as well as the fat.

At any rate it is fairly evident that the fat does not constitute a fair basis for estimating the other food constituents of the milk and if we are correct in estimating the value of other foods and feeds by the amount of these solids they contain it is apparent that the fat does not constitute a fair basis for estimating the value of all milks. This is a matter of greater moment to all milk producers than might at first appear.

A gentleman in writing to a farm paper recently complained that a condensary which started awhile ago in his vicinity at first said that the fat in the milk was a small consideration and urged the use of Holsteins as milk producers because they produced a larger proportion of the other solids which was what they wanted in condensed milk but later they came down to a fat basis in estimating values. They were enabled to do this because the fat content is so universally accepted as the basis and a large concern like this has a large influence in depressing milk prices generally.

If we applied the same tests in estimating milk values that we do in appraising other things that we eat and that we feed to our stock there would not be this opportunity of setting up such a standard. And if the other solids, the proteins and carbohydrates, are a correct basis for establishing other food value why are they not in milk as well. It may not be so convenient for condensaries and cheese factories to determine the amount of these contained in milk as it is to make the test for fat, but this should not outweigh the matter of justice.

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Cultivating and watering	40.00
Power for harvesting	45.75
Teams for harvesting	26.00
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Interest on 7 acres land at \$2 per acre	40.00
Cost of producing 119 tons of silage	\$412.05
Total cost of producing one ton of silage	3.45
119 tons of silage is equal to 59½ tons of hay.	
59½ tons of hay at \$15 equals	\$892.



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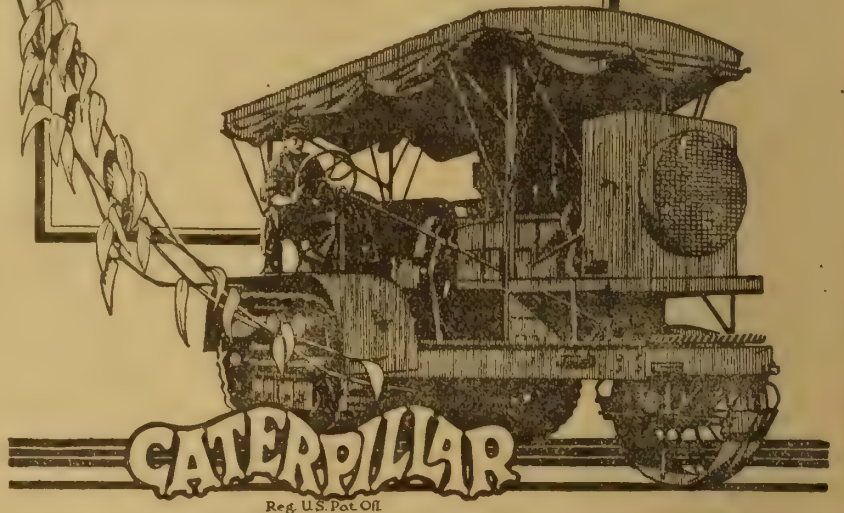
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subtract from this the cost of the equal amount of silage, \$412.05, and you have left \$479.95, as a clear profit saved on feed. After paying for this silo \$316.10, there was still a balance of \$163.85 over and above all costs.—Utah County Farm Bureau News.

GIVE THE CORN A GOOD START J. M. Jones.

Then our corn crop is half made. Let's take time to prepare a good seed bed, and look well after the first cultivation. Ground for corn should be in first class condition. The corn should be planted at the right time and its success in the start will depend largely on the seed bed.

If the bed has been carefully prepared, being level, fine and firm, and good seed has been sown at the proper time other conditions being favorable in a few days time, we will see an excellent start of corn plants. They will come up evenly and have a dark green color and possess lots of life and vigor.

At this point cultivation should begin in order to keep the weeds in check. A good seed bed is generally conducive to plenty of weeds, and for that reason the first cultivation of this crop should be done as soon as possible and the work must be done thoroughly. If we are careful in working the corn at its first cultivation, we will have very little bother with weeds during the remaining cultivations of the crop.

Nothing looks better than a clean field of growing corn. The corn will do better too, or any other crop for that matter, that is kept clean during the growing season. A weed will use as much moisture during the growing season as a corn plant if given a chance to grow; therefore, it is very important that we try to eradicate them or as many as possible during the early period of cultivation.

The man who takes pride in securing a good seed bed will be rewarded at harvest time for all the extra effort put forth in that direction.

When the seed bed has been properly prepared, I for one, believe we are in a position to estimate to a certain degree of accuracy what the crop yields for that particular crop will be, other conditions being equal.

A good seed bed is helpful in many other ways, such as guarding against not only plant disease, but insect pests, drouth, etc. Good judgment is all that is required in securing an ideal seed bed. All soils are not alike and much depends upon the man who handles, oversees, or does this work.

Some folks tongues are like clocks as run on strikin', not to tell you the time o' day, but because there's summat wrong i' their insides.

—George Elliot.

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SALT LAKE CITY

LIVE STOCK

HOW TO JUDGE LIVESTOCK

By Dr. W. E. Carroll, U. A. C.

Livestock judges, as well as poets, are born, not made. But many not born to the art may develop into good judges by proper training. This training must include a close study of animal form in its relation to functions, and should result in the development of an ideal in the minds as the type toward which to work.

The qualities necessary for successful judging are a love for animals, ability to see quickly and accurately the merits and defects in animals, accuracy in remembering details of animal form, ability to make accurate comparison of animals with each other and with an ideal, power to form accurate judgments of the relative merits of the strong and weak points of the animals under consideration. The development of accuracy and capacity along the lines mentioned will naturally result in clear cut conceptions which can easily be supported by logical reasons for any of the judgments formed.

There are two general methods of judging livestock: the scorecard method and the comparative judging of groups of animals. While scorecard work is a very necessary practice and has a distinct value in training, comparative judging is the method almost universally employed in actual practice.

The chief value of the scorecard is to acquaint the beginner with the names of the various parts of the animal and to give him a knowledge of the relative value of each part. For example, the fleece of a fine wool sheep is given about 30 of the 100 points; in mutton type sheep fleece is allowed only 9 points. In judging sheep it is absolutely essential to know that the scorecard considers the fleece of a fine wool sheep as nearly one-third of the entire animals, while in mutton animals the fleece is given slightly less than one-tenth of the total score. Again, the scorecard for beef cattle pays little attention to the udder; the dairy scorecard gives 32 of the 100 points for udder and mammary development. Furthermore, as against these 32 points for mammary development the scorecard allows the head and neck only 7 points. It is essential to know the estimate the scorecard places on these various parts in order that they may each receive intelligent and proportionate consideration in comparative judging of rings of livestock.

In comparative judging, animals are compared with each other instead of with a perfect standard as in scorecard work. The defects and merits of each animal in the ring are studied carefully, and the animal whose defects are least vital and whose merits are greatest is placed first, the next best is given second place, and so on for as many places as are required.

In any class of animals there are certain defects which will disqualify animals possessing them. The judge should be familiar with all of these, so that such animals would not receive consideration.

Consistency in judging demands that animals of the same or very similar types be selected. For example, if a judge of Shorthorn cattle selects for first place a very refined, smooth animal of medium size, it would not be considered consistent to give second place to a large, somewhat rough or coarse animal, and third to an animal of the smaller, finer, smoother type.

In judging any class of livestock, system in examination of the animals is very essential to speed and accuracy in a judge. Determine first if the animal is standing naturally, as many defects may be covered up by a clever showman holding the animal in a certain position. It is desirable before beginning a detailed study of the animal to take a view of its appearance from all angles at a distance.

This will reveal its general conformation to type, its size, style and general symmetry.

After viewing the general appearance in this way a detailed and systematic study of the conformation of the animal is necessary. This can best be done by beginning at one end of the animal and observing the various parts in order as they are met.

Handle the animals as little as possible. Handling is necessary to determine the quality of the hind, hair and bone, the quality of fat cattle and sheep, the fleece of sheep, and in certain cases handling is necessary if unsound horses are permitted in the ring. If the touch is properly developed and the judge knows what he is looking for, after once handling these parts he should be able to remember them in detail. The average beginner does much more handling than is necessary.

It is usually well to see both cattle and horses in motion, as defects which may not be visible at any other time can often be seen when the animal is moving. Then, too, the movement of the horse has a direct bearing on his value and should be considered with the other points in judging.

During the study of any one animal in this manner, the corresponding parts of all the animals of the ring previously examined should be remembered and compared as the judging proceeds. This enables him to have the placing practically done by the time the last animal has gone over.

A placing should be made only after all the reasons for and against it have been carefully considered. Where this is the case a judgment will be just and can be defended with good reasons, and there should be no cause for reversing such a decision.

AFTER THE PIGS ARE WEANED

Change in feeding the young pig from dependence on the dam to a reliance upon other feed can be made so gradually and with such careful selection of sound and suitable feed stuffs that there will be practically no shrinkage or derangement of the digestion. If the litter has before weaning, been gradually accustomed to getting a part of its support from good meals, the change from the milk of the dam to meals and sweet skimmed milk can be made without any special disturbance of the thrift of the pigs. There are several points, however, at which care must be exercised, both at weaning time and later or digestive disturbances, that are so greatly fatal to young pigs, are almost certain to occur. One of these points is in the quantity of feed, especially when skim milk is plenty. Pigs will consume two or three times as much skimmed milk as is necessary for the best results. Three or four pounds of it sweet and lukewarm with a little cornmeal shorts, middlings, barley meal, etc., will make better growth than a larger quantity, and will be vastly safer for the pigs. There are a number of popular errors prevalent about the pig as a feeder, and one of them is that it knows when it has enough. It does not. It is an "organized appetite," bred for the rapid transformation of food into meat, and it serves its purpose wonderfully well but at all ages, and especially when young, it is just hog enough to eat more than is good for it. When considerable quantities of skimmed milk are given the health and thrift of the pig almost always suffer.

Another point at which care is necessary is in seeing that the food fed be sound and sweet. By this we do not mean that the milk must necessarily be sweet, or that pigs cannot safely be fed buttermilk, if the quantity be limited, and if they be gradually accustomed to it. In very moderate amounts we think that sour milk

can be fed to pigs that have been gradually brought to it, although there is no doubt about the fact that sweet milk is safer in the hands of any feeder, and particularly in those of the somewhat inexperienced feeder. What we do mean is to caution the pig grower against the deadly swill barrel. It does not take much good sweet food to which a little swill barrel ferment has been added to put a litter of pigs out of condition, check thrift and perhaps kill a half or more of the youngsters, and the same principle that makes the contents of the swill barrel deadly also makes it very important to keep the troughs clean. A little feed left over and exposed to the heat of the sun, under conditions favorable to fermentation, often contaminates the next mess that is given the pigs, and before one knows it scours and digestive disturbances follow. One of the points, therefore, at which great care is necessary is to keep the feed receptacles thoroughly cleaned.

An old hog with strong digestive powers, equal to the task, perhaps, of assimilating railroad spikes, may stand the swill barrel and its contents, but young pigs cannot. They are fresh from the most easily digested food to be found in nature, namely, the milk of the dam, and their stomachs are still built on the plan that needs easily digested and unfermented food. Even in the case of sour milk, which, under the conditions above suggested may be fed, it should be remembered that sour is a broad term covering a wide difference in the degree of acidity. Milk slightly soured may go with safety when a high degree of acidity would be fatal to condition and thrift and perhaps to life.

Another point should be borne in mind with respect to milk feeding. Now and then the feeder has a cow whose milk he fears is unhealthy. Very properly he decides not to use it in the family or for dairy purposes until he is satisfied as to the cow's condition, or until she recovers, if it be not some incurable disease like tuberculosis that is suspected. In order to keep the milk from going to waste, however, he decides to feed it to the pigs. This is often a serious mistake; set it down as a fact that milk justly suspected of coming from a cow in such a state of health as makes it unfit for family use, is also unfit for the pigs. Every swine grower knows how promptly a sucking litter responds to feverish or unhealthy symptoms in the dam. The same effects follow feeding unhealthy and unwholesome milk to the pigs after they are weaned and on their own behalf. If the cow's trouble is a temporary one, attended with fever, scours in pigs is almost certain to follow, as has been found, and where the cow is affected with such diseases as tuberculosis, cases are numerous where tuberculosis of the stomach has been contracted by the pigs to which the milk was fed. Milk from diseased cows is unfit to be received into the stomach, even that of a pig.—Animal Husbandry.

PASTURING ALFALFA WITH HOGS

Some experiments have been made by the government on one of their reclamation projects by pasturing irrigated alfalfa pastures with hogs. In 1915 the returns was from \$75 to \$88 per acre which they figure is the equivalent to \$10.84 per ton on the farm, for the hay crop which was harvested and consumed by the hogs. We quote part of the report on this experiment.

This rotation consisted of corn, flax, beets and three years of alfalfa. The third-year alfalfa and the corn are harvested by hogs, the object of this experiment being to ascertain the value of alfalfa and corn crops when so harvested.

The alfalfa pasturing experiment was divided into two periods: April to July, or the spring period, and July to September, or the summer period. The plat used was divided into two equal portions and the hogs were pas-

tured alternately for 10 days at a time on each part. This allows for more uniform growth and convenience in irrigating. In addition to the pasture, the hogs were given a supplementary ration of 2 pounds of corn per day per 100 pounds live weight.

On April 24 five high-grade Duroc-Jersey hogs weighing 789 pounds were placed on the alfalfa plat. On May 24 it was found necessary to remove one hog, as the supply of feed was inadequate. The remaining four hogs (Continued on Page Sixteen)

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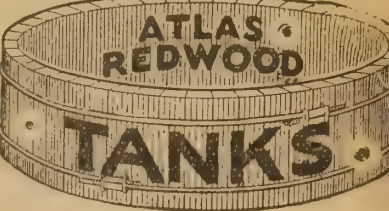
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Patriotism this year can be expressed in three
ways, at the front, on the farm and in the factory.
All three are necessary and each one depends
upon the other.

Nature is helping the very late spring. Crops
are growing very fast. Two farmers of Idaho
made the statement that one week after planting
their spring wheat it was up and coming through
the ground.

FARMER NOT TO BLAME.

Some of our good friends want to blame the
farmer for the high prices and high cost of liv-
ing. The very fact that for years he has accepted
low prices is proof that he does not controll the
market. He never thinks of such a thing as
limiting production, burning or destroying his
wheat in order to "bull the market," nor does he
seek to stop the other fellow from producing a
maximum crop.

For his own good he produces all he can, and
of the best quality. They must find some other
reason then to blame the farmer.

DRAIN THE WET LANDS.

Thousands of acres of wet and water-logged
land should be drained and made productive.
This land is, or was at one time, some of the
very best land.

The expense of doing this is so small as com-
pared to the returns that are sure to come, that
every foot of this kind of land should be drained.

There is no excuse for putting this work off.
The government offers the services of men who
are trained in this line of work, to survey the
land and tell you how to do it and without cost
to you. The greater part of the work can be
done during the summer season when time will
permit. The cost of drain tile is small for each
acre.

Now while prices are high one season's crop
may pay the entire cost. Many instances could
be cited where the crop of the following year has
paid the cost of draining the land.

We owe it as a duty to our country to increase
crop production, and draining our wet land is one

way to help, and at the same time improve our
farms.

CATTLE DISEASES CAUSES GREAT LOSS

There is serious neglect among our livestock
owners when they allow diseases to take so many
of their cattle.

The state and the government realize this and
provide expert men to help stamp out such dis-
eases. You can call on these men and they will
help you, and without cost to you. It is your
duty to tell them of any contagious diseases so
they can help control it.

There is hog cholera, blackleg, anthrax, con-
tagious abortion and others that cost us in live-
stock loss each year an amount that runs into
many millions.

If any of your cattle are sick, don't be afraid
to ask questions and find out what to do. Do this
for your own good and the good of the com-
munity. This year, above all others, let us stop
this loss and prevent, as far as possible, the dis-
eases among our cattle.

BUY YOUR MACHINERY NOW.

The increased acreage and prospects of good
crops mean the farmer will need machinery for
cultivation and harvesting.

Right now is the time to buy it. Prices will
be no lower; chances are they will be higher.
What is even more important than price is to
be able to get what you want, so we suggest you
make a careful survey of all machinery you will
need and place your order right now. Even though
it may be two or three months before you will be
able to use it. It will be poor economy for a
farmer who needs and can use a machine not to
buy it.

Help is going to be one of the big problems
this year on the farm. Good labor-saving ma-
chinery will be one of the best things for the
farmer to own.

Preparedness is just as important on the farm
as any other place. Good tools and farm im-
plements are what you need. Look ahead a
little and anticipate your want, and buy your
farm machinery now.

KEEP YOUR BROOD SOWS

On account of high prices of feed and the un-
usual high prices of pork, many of our farmers
are inclined to dispose of their sows for the block,
some of which are pure bred.

One of our pure bred hog raisers said that he
sent a car to the market a short time ago, but
he would never have done it had he known that
conditions would develop as they have done.

There are fewer hogs in Utah and Idaho today
than there has been in years. Right now is when
we ought to have plenty of hogs for sale and
brood sows to increase our herds.

Prices are the highest known for years. It
seems to be the opinion of our best advisers that
hog prices have gone up to stay. The prices will
be much higher than they have been the past
year or two.

Keep your brood sows, even though the prices
of feed is high. Help increase the number of
hogs.

Money in the hog business is made by the man
who stays in the business, who does not go out
with every change of price.

Keep your brood sows and breed them now.

WHERE IS THE END?

Judging from some people's actions, they do
not seem to realize that we are one of the na-
tions now engaged in this world war. Others
accept of the fact that we are at war, but think
it will only be a short time until it will be over.

When it will be over will depend much upon
what happens. Even though war should end
within the next few months, the shortage of food
would still exist.

For several hundred years statistics show that
the price of foodstuff is higher the year following
the war than during it. What we want to em-
phasize is that no one knows where the end is,

but our government officials seem to realize the
food shortage and want the farmers to go the
limit in producing a maximum crop.

Prices are sure to be good, and this should en-
courage increased production. An unusual duty
the farmer can do his country this year, to be a
patriot by staying at home and growing food for
our nation, and being well paid for it in the way
of good prices for all farm crops.

Our prospects for a crop is good—another rea-
son why we should make a greater effort to pro-
duce more. Some states can produce only a par-
tial crop—another reason why we should produce
more. Our allies are short of food and can only
win by food being sent to them. When the war
will end no one knows, but we do know it is wise
to produce all the foodstuff possible.

SCHOOLS SHOULD DO BETTER

The fact that there are a million young people
in the United States every year who leave school
without training in any trade at which they can
earn a living, should be answered by our schools
or the officials who are running them.

Many of our young people who leave school
with "good credits" have no knowledge of the
different occupations possible. They have "been
going to school" for so many years, doing no
manual work, that when school is out they want
something "easy." Every young man or woman
who goes to school should study something that
will prepare him or her for some kind of a trade,
some kind of vocation. Learn to do something
and do it well, what ever line of work you may
choose.

Our schools must be made more practical, more
helpful to the community they serve. "The se-
cret of success in life is for a man to be ready
for his opportunity when it comes."

Training the children to do some one thing bet-
ter—the line of work they are going to follow—is
the thing we want. It cannot all be done in the
schoolroom. The school teacher could help the
student all the year around, spending what time
that is necessary for technical training in the
schoolroom and the rest of the time at practical
work—doing the work. The day is coming—will
soon be here—when we will "cut out" a lot of the
work we are now doing and make our schools
more helpful.

BUSINESS IS GOOD

With all this talk of economy, there is some
danger of people going to extremes and hurting
general business.

Business is good now and it should be kept
that way. Crops are good and prices are high.
There is plenty to do for the many who want to
work, and while wages are not as high at some
places as they should be, generally they are much
higher than for years.

Thrift should be our watchword, buying those
things we need and that good economy suggests
we should purchase.

It will be poor economy to go without some-
thing that will help increase our efficiency on the
farm or in the home.

We must produce food for ourselves and feed
the world, and practice the best economy possible
in using it, but this does not mean we should
hoard our money.

The United States was never so prosperous in
its history as today. Nearly all the money we are
loaning the allies is for the purchase of supplies
here in our own country. It will come right back
to us for our food supplies and other products.

Every one must help. We have every confidence
in our nation that she will do just the right thing
at the right time. Our resources are practically
unlimited. Our people are loyal. There is every
reason for confidence.

Knowing all these things and the conditions
ahead of us, there is only one thing to do—use
a little common sense. Produce all the foodstuffs
possible and practice the best of thrift and econ-
omy, so we can have just as much as possible to
sell our allies.

This will make good business for all of us.

Drainage of Irrigated Farm Lands

By C. F. Brown, Civil Engineer.

The next division under "Construction Features" is that of surface surveys and layouts. I will touch lightly on this question as it is one that is generally understood by engineers; the practices are standardized, even laymen understanding the need of proper topographical surveys and location surveys for mains and laterals so as to secure the maximum slopes for drainage.

Methods of trenching and laying tile have been more or less standardized, and are matters of common knowledge in a general way. I do not deem it advisable to go into details in this relation at the present time because of the general understanding of the subject. Several bulletins have been published, and are available for distribution by the U. S. Department of Agriculture and the Utah Experiment Station bearing on this subject. Portions of these bulletins dealing with the bracing of trenches by means of a protecting shield behind the wheel for laying tiles and the use of gravel and sand for foundations of tile and for filter purposes, with a view of keeping out the salt and fine sand, should be made the subject of special study.

Relief wells bored or drilled in deep trenches have been mentioned somewhat in the preceding paragraph and explained more or less so that it will not be necessary to emphasize this question to a much greater degree. Where the water is held under pressure at greater depths than it is possible to drain to economically, and is thus forced to the surface slowly, it has been found that the digging of trenches to ordinary depths is of now avail; the water will rise to the surface soil within a few feet of such trenches and run off the surface into the drains thus constructed. Experience has demonstrated the fact that without some auxiliary work, drains of this kind are absolutely inefficient.

The usual method of meeting this condition is that of digging or boring the relief wells through the more pervious soils reaching to the porous formation and connecting with the tile at ordinary depth. These wells will be found to have the affect of relieving the pressure and cutting down the pressure head to the outlet drain, thus effectively cutting off or intercepting the seepage within the radius of equal pressures if the wells are of sufficient diameter or capacity to accommodate the water that is held under pressure.

The outlets for drainage in the arid sections are practically all by means of gravity flow. In portions of the humid sections and portions of some projects in the arid regions where lands are located in low valleys with water surface near the surface, it has been found advisable to conduct the drains to some low portion or sump from which the water may be pumped and conducted away from the lands by surface ditches. The pumping lift as a rule ranges from six to ten feet in such constructions. This pumping is not an expensive proposition, and in many instances need be only an auxiliary plant in connection with gravity outlet as the water surface furnishing the outlet recede during the latter part of the season to such an extent that the pumps can be closed down after a few months operation until the return high water stage.

The kind of construction here employed, is that of draining into the sumps from which tide gates will allow the water to flow out when there is no back pressure, and which will keep the water from flowing in from the gravity outlet burdening the pumping plant when the latter need to be in operation. Resort has been had to this method of construction one example of which is the Logan Land &

Drainage Company Project on the Logan River near Logan, Cache Valley. It is expected to have to pump here approximately two months during Spring. The balance of the year, the water will flow out by gravity. It is not necessary to pump only for the lower portions of this project, the balance draining out by gravity during the whole year.

Gravity and pumping outlets go hand in hand; in fact, we do not make any distinction for gravity conveys the water away when it is once lifted to the surface.

In concluding this paper with the division of the "Results Attending Proper Drainage," I want to call or attention to two subjects that have been covered more or less by other engineers and agriculturists, and then to point out one or two which have not received as much attention. One of the first benefits resulting from tile drainage will be that due to the improvement of the mechanical condition of the soil. By lengthening the growing season with better crops under more favorable conditions for soil bacteria and the production of plant food. The season is lengthened by the earlier drying out of the lands by reason of the tile drains. This is true where crops are grown on lands not deemed to be in need of drainage. Experience has demonstrated the fact that crops grown on drained lands are as good or better than those grown on lands generally thought to be free from the need of drainage. Water conditions may not be sufficiently bad to make drainage imperative, but in many instances would justify the cost.

The time is rapidly approaching when thousands of acres not now deemed to be in need of any artificial drainage will be tile drained for the advantages mentioned above. One of these beneficial effects resulting from tile drainage and one which has been but imperfectly understood and not generally known about, is the value of irrigation water thus developed and conserved which may be used for the irrigation of other lands for which there is not water at the present time.

The value of irrigation water is the real basis for estimating or determining the productive capacity and earning power of the lands in arid regions. There are a great many acres of land in the State of Utah and surrounding states not capable of producing crops without artificial irrigation. These lands lie adjacent to irrigated and cultivated areas, and any conservation of the water now applied really means the extension of the resources of the several localities through the agricultural development that may follow.

As examples of the beneficial results following drainage, I desire to mention one or two instances. The first one is that of the farm of S. H. Lamb, Hyde Park, Cache County, lands that produced very abundantly up to 20 years ago. They subsequently became very badly water-logged and alkalined to some extent, and were valuable only for summer pasturage, bringing in returns on a valuation of not more than \$10.00 per acre. According to the owner's statement, Mr. Lamb produced subsequent to drainage from 25 to 30 tons of sugar beets per acre; I was there during the harvest of one of these crops, and can truthfully say that I have not seen better crops grown in the State. Mr. Lamb also told me he would not take \$500 per acre for the land, as it would produce him 10 per cent on this valuation over and above the expenses of growing the crop, fertilization, property and water taxes. Lands completely ruined in the Bear River Valley by accumulations of water and alkali and which have been unproductive from one to ten years,

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were reclaimed at an expenditure of \$18.00 to \$20.00 per acre, and produced crops of from 16 to 20 tons of sugar beets per acre, and crops of oats yielding from 60 to 75 bushels per acre, the first year after drainage.

There are many other notable instances of improvement following the installation of tile drainage.

In conclusion, I desire to express my opinion that we are now enter-

ing upon a period of conservation of agricultural resources which will be one of the most effective and practical that has been undertaken in the last fifty years.

I observe that th' rich nave th' price but not the appetite, whilst th' poor have th' appetite but not th' price.—
"Mike Kinney."

HOME

WATCH THE BREAD CRUMBS

We may decrease the waste found in many of our kitchens by watching jealously the scraps of bread, the bits of crust, and the crumbs left on the bread board, after slicing the bread for the daily meals.

It is well to keep these pieces in a closed but airy place until thoroughly dried, when they may all be ground in a few minutes time in the meat grinder and made ready for their many demands.

Stale bread crumbs may be used in layers in escalloped dishes or spread on top of creamed dishes. For this melt one teaspoon of butter and add to it one cup of stale crumbs. Heat until a golden brown, stirring to keep from burning.

To use a quantity of bread crumbs try the following recipes:

Steamed Brown Bread—2 cups corn meal, 2 cups sour milk, 2 cups bread crumbs, 1 cup molasses, 1 teaspoon salt, 2 teaspoons soda, 1 cup seeded raisins. Sift together the soda, salt and corn meal; mix through the bread crumbs. To the dry ingredients add the sour milk and molasses. Mix well and add the floured raisins. If the mixture seems too dry add a little water. This will depend on the dryness of the crumbs. Put into oiled molds and steam 3 to 4 hours. This should be served hot.

Bean and Cheese Roast—2 cups cooked lima beans, ¼ pound of American cheese, bread crumbs, 1 tablespoon chili sauce, salt and paprika. Put the beans and cheese through the meat grinder, mix thoroughly and add the chili sauce, seasonings, and enough bread crumbs to make into quite a stiff loaf. Cook in a low oven for about 30 minutes. It may be basted occasionally with butter and water. With this may be served a chili sauce or tomato sauce.

For other similar loaves see the U. S. Department of Agriculture Farmers' Bulletin 487, Cheese and its Economical Uses in the Diet.

Bread crumbs are now an expensive by-product, also a high nutritive value. One cup of stale crumbs weighing 3 ounces will give a total of 239 calories, 34 of these calories from the protein, 11 calories from the fat and 194 calories from the carbohydrates.—Hallie Hyde.

AN OUNCE OF MEAT

"Many a Mickle Makes a Muckle"

An ounce of edible meat—lean meat, fat and lean, suet or fat trimmed from steak, chop, or roast—seems hardly worth saving.

Many households take just this view of the matter—do not trouble to put such an insignificant scrap into the ice box or soup pot—do not bother to save for cookery a spoonful or two of drippings or a tiny bit of suet or fat.

Yet if every one of our 20,000,000 American families on the average wastes each day only one ounce of edible meat or fat, it means a daily waste of 1,250,000 pounds of animal food—456,000,000 pounds of valuable animal food a year.

At average dressed weights, it would take the gross weight of over 875,000 steers, or over 3,000,000 hogs—bones and all—to provide this weight of meat or fat for each garbage pail or kitchen sink. If the bones and butcher's waste are eliminated, these figures would be increased to 1,150,000 cattle and 3,700,000 hogs.

Or, again, if the waste were distributed according to the per capita consumption of the various meats (excluding bones), it would use up a combined herd of over 538,000 beef animals, 291,000 calves, over 625,000 sheep and lambs, and over 2,132,000 hogs.

Millions of tons of feed and hay, the grass from vast pastures and the labor of armies of cattlement and

butchers also would be scrapped by this meat-waste route.

But—every household doesn't waste an ounce of meat or fat every day? Very well—make it one out of a hundred families, but keep in mind that all meat allowed to spoil and all meat and fat rendered inedible by improper cooking, scorching or burning must be counted as waste. Make it an ounce every other day or one a month. Such waste still would be unendurable, when meat is scarce and when fat is of such vital food importance to many nations.

Waste of meat or fat is inexcusable. Every bit of lean meat can be used in soups, stews, or in combination with cereals; every spoonful of fat can be employed in cookery; every bit of drippings and gravy can be saved so easily and used to add flavor and nourishment to other dishes.

MILK IN THE DIET

Forty-five cents a pound for ham! Such shocks as this make the housewife look about and investigate the prices of other foods that belong to the protein class. The result of inquiries at the local stores of Moscow on May 15 shows the following prices: Round steak 25c, loin steak 28c fresh pork 30c. The cheapest kind of meat that can be purchased is called stew and costs 15c per pound. Turning to legumes as a cheap source of protein food, it is learned that navy beans are 12½, lima beans are 18c a pound, and canned peas are from 15 to 25c a can. Ranch eggs are 30c, and guaranteed fresh ones are 35c a dozen. It usually pays to buy the best. The milk man was next consulted and milk if delivered costs the consumer at the rate of 12 quarts for a dollar or 8 1-3 cents a quart. If the consumer calls for the milk it can be had for 16 quarts for a dollar or 6¼ cents a quart.

The following timely suggestions will enable the purchaser to view these foods in relation to their food values or in terms of nourishment. Like the starches and sugars, the proteins are producers of heat and energy. They are also tissue builders and must be depended upon for this important work. Their value is estimated in calories (a term used to indicate food value). The term calorie is used as a basis of comparing food values of the following list of staple articles.

Name	Cost Per lb.	Calories No. Cal.	Approx Per lb. for 1c.
Ham	.45c	1073	24
Round steak	25c	724	29
Loin steak	.28c	1075	38
(Includes fat)			
Fresh pork	.30c	1030	34
Navy beans	.12½	1564	125
Lima beans	.10c	1586	88
Canned peas	.20c	525	26
Eggs (9)	.7c	596	22
Milk (pint)	.41-6	314	75

Milk is 4 per cent butter fat.

Comparing the above it is evident that beans will give the highest food value for a one cent investment. For those laboring in the open air they will be found to be a cheap source of protein, but for indoor workers or those of delicate digestion they are often difficult to digest. Such persons will find that clean whole milk represents the best investment. It will furnish more than three times as much nourishment for the same amount of money as can be obtained from ham and almost three times as much nourishment as can be purchased for the same money spent for beef.

Not only does milk build tissue in the form of protein but it also is a most important source of milk, sugar, fat, and minerals. Lime and phosphorus are the most important minerals furnished by milk and these are

Read this Extract from President Wilson's Proclamation

"Let me suggest, also, that every one who creates or cultivates a garden helps, and helps greatly, to solve the problem of the feeding of the nations; and that every housewife who practices strict economy puts herself in the ranks of those who serve the nation. This is the time for America to correct her unpardonable fault of wastefulness and extravagance. Let every man and every woman assume the duty of careful, provident use and expenditure as a public duty, as a dictate of patriotism which no one can now expect ever to be excused or forgiven for ignoring."

Up to June 15th you can plant corn and beans, and have a good stock of both, 'plant all you can, it is needed.

Vogeler Seed Co.

SALT LAKE CITY, UTAH

U. S. Makes Comparison

As compared with other food products, selected for illustration by U. S. Department of Labor, a table given in the report shows sugar has contributed less to the high cost of living than eight other food products, the prices of which show the least increase of all commodities which are now helping to swell the acreage food bill.

EXTRA FINE Table and Preserving Sugar ABSOLUTELY PURE

It is interesting to note the department shows that onions increased 77 per cent, potatoes 30 per cent, and that other articles, such as lard, butter, cheese, flour, cornmeal and navy beans have jumped to abnormal levels.

Sugar is one of our cheapest and best foods.

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the principal constituents of bone and teeth. They are also fundamental in other physiological processes. Since bones and teeth are not confined to childhood alone, milk will prove to be valuable for persons of all ages.

Milk should be utilized in cookery in every possible way. Where the separator is used skim milk will be found valuable as a substitute for water in cooking cereals, vegetables, and in preparing numerous dishes.

The skim milk contains the same constituents as whole milk with the exception of the butter-fat.—Jessie M. Hoover.

STALE-BREAD RECIPES

Vegetable Soup Thickened With Bread Crumbs

1 quart skim milk, 1 cup bread crumbs, or 2 large slices stale bread, salt, small amount spinach or outer leaves lettuce (not more than 4 ounces). 1 small slice onion.

Cut the vegetables into small pieces and cook with the bread crumbs in the milk in a double boiler. If a large quantity is being prepared, as in a school lunch room, for example, put the vegetables through a meat chopper. In this case slices of bread may be ground with the vegetables in order to absorb the juice.

Pancakes.

One cup crumbs, 2¼ cups skim milk, ½ cup flour, 4 teaspoons baking powder, 1 teaspoon salt, 1 teaspoon sugar, 1 teaspoon melted fat, 1 egg.

Soak crumbs in milk for three-fourths of an hour. Then add other ingredients and cook on a hot griddle, like ordinary pancakes. If sour milk is used, substitute one-half teaspoon baking soda for the 4 teaspoons baking powder.

Gingerbread.

1 cup molasses, ½ cup boiling water, 1-13 cups fine bread crumbs, 2-3 cup flour, 1 teaspoon baking soda, 1½ teaspoons ginger, ½ teaspoon salt, 4 teaspoons melted lard or other fat.

Add water to molasses and combine

with the dry ingredients mixed together, then add fat, and beat. Bake for about 25 minutes in a hot oven.

Indian Pudding Made With Crumbs.
1 cup fine crumbs, 1 quart skim milk, 1-3 cup sugar, ¼ cup molasses, 2 tablespoons melted butter, or other fat, ¼ teaspoon ginger, ¼ teaspoon cloves, ¼ teaspoon cinnamon.

Scald the crumbs in milk; add the other ingredients; and bake 1½ hours in a slow oven. This pudding may be made with any kind of bread crumbs, but it furnishes an especially good means of using up stale corn bread.

Egg Toast.

6 slices bread, 1 egg, 1 cup milk, skim milk, or water, ¼ teaspoon salt. Beat the egg, and add the liquid and salt. Let the bread soak in the mixture until slightly soft. Then fry to a light brown on a hot, well-greased pan or griddle. More eggs may be used if available.

As a Breakfast Food.

Another good way of using stale bread, is of treating bread so that it shall not become stale, is to put the pieces in the warming oven or on the back of the stove and leave them until they are crisp and a delicate brown throughout. This is often called twice-baked bread and is very popular with children and also with grown-ups, who like its "crunchiness" and the flavor which comes with the slight browning. The rusks which used to be commonly served like breakfast cereals in some parts of the country were made by crushing such twice-baked bread with a rolling pin—(College Series 46)

THE USE OF CORN

AS A BREADSTUFF

It may not be generally known to the housewife that cornmeal lends itself to the making of "light" bread in combination with wheat flour. It can not, of course, replace wheat flour entirely, but may be used in any proportion up to 25 per cent of the total flour required and still produce an attractive loaf of bread. Although its volume may be somewhat smaller and its texture somewhat poorer than if made from all wheat flour, such a loaf will be light and spongy, with a rich brown crust, wholesome and very palatable.

Two methods for wheat and corn bread have been formulated and tested. According to the one method the raw meal is employed directly in preparing the dough and no extra time or labor is require in making the bread this way. According to the second method the meal is partially cooked before producing it into the dough. While this does entail a slight amount of additional time and labor, the result is a loaf of better quality which well repays the extra effort expended.

Wheat and Corn Bread No. 1.

(Enough for four loaves.)

2½ pounds or 2¼ scant quarts sifted bread flour.

¾ pound or 2-2-3 cupfuls corn meal, 2 cakes of compressed yeast, 3 level tablespoonfuls of sugar, 1½ level tablespoonfuls of salt, About 1 quart of liquid (water, milk or equal parts of milk and water).

3 level tablespoonfuls of shortening if desired.

If milk is used it should be scalded and then cooled until lukewarm. Less yeast may be use, but more time for raising will then be required.

Make a sponge with 2 pounds of white flour, the yeast, salt, sugar and the lukewarm liquid. Cover and set in a moderately warm place to rise, where it will be free from drafts and where the temperature will be between 80 degrees and 88 degrees F. When the sponge has become very light, which should occur within 2 hours, beat it up thoroughly, add the softened shortening, if this is to be used, and gradually work in the remainder of the wheat flour which has been sifted with the corn meal. Knead the mixture until a smooth and elastic dough has been formed which is fairly soft, but not sticky. If the dough is too stiff or too soft, add a little more water or flour as required, kneading well after each addition. Cover and

set back to rise again until double in volume, which will require from 1 to 2 hours. Knead lightly, divide into three or four approximately equal portions, reserving a small ball of dough for an "indicator." Place this ball of dough in a small jelly-glass having straight sides, which has been slightly warmed. Note the volume of dough in the tumbler and mark the glass at twice this volume.

Mold the loaves and place in slightly warmed and greased pans. Place these, together with the glass containing the "indicator" shows that it has just doubled in volume. Then place the loaves in the oven, which should be at a good steady heat (400 degrees to 425 degrees F.), and bake 45 to 50 minutes.

Wheat and Corn Bread No. 2.

(Same proportions as for No. 1 except the liquid.)

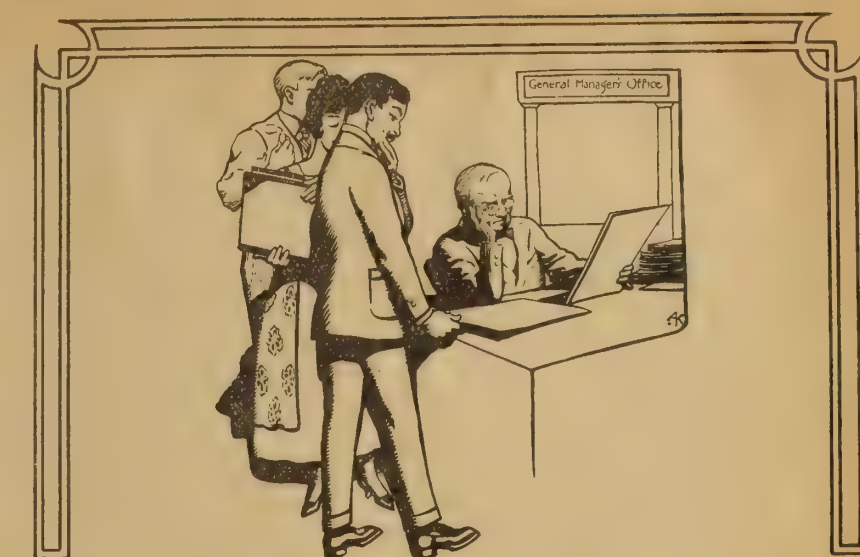
Put 2-2-3 cupfuls (¾ pound) of corn meal into a double boiler or a vessel which can be placed over another one containing boiling water. Add to the meal 3½ cupfuls of cold water; mix thoroughly and bring to the boiling point, stirring frequently. Allow the meal to steam for at least 10 minutes, then cool it until lukewarm. To this scalded and cooled meal add the salt, sugar, 1 cupful of flour and the yeast rubbed smooth and mixed with 2 cupfuls of lukewarm water. Mix thoroughly, cover and set in a moderately warm place to rise as directed in method No. 1. When this batter (or sponge) has become very light, which will require about 2 hours, beat it thoroughly, add the softened shortening, if it is to be used, and the remainder of the white flour (2 pounds or quarts). Knead thoroughly until it is smooth and elastic. Should the dough be either too stiff or too soft add water or flour, a little at a time, working it in thoroughly, until the dough is of the proper consistency. Cover and set back in its warm place to rise until double in bulk. Then mold into loaves and finish as directed under method No. 1.

THE PLACE OF EGGS IN THE DIET

Furnish valuable elements not present in many other nitrogenous foods. Ease of preparation and other factors should be considered as offset to price. Because of the peculiar food value of eggs, their relative freedom from waste, and the ease with which they may be prepared, their use as meat substitutes at least is often desirable even when a consideration of their price alone would not so indicate. While this is true of eggs served as one of the principal dishes of a meal, it often is not true of eggs used in cakes, puddings, and other desserts along with meats. It is in the latter use of eggs that the housewife who wishes to economize can try especially to curtail consumption. A fact which makes this latter practice easier is that with the present availability of baking powders, corn starch, gelatin, etc., the use of eggs to impart lightness or to thicken liquids is not now essential as it was in the past.

The principal food element furnished by eggs is protein the nitrogenous tissue-building element whose presence in considerable proportions also gives meats, fish, milk, cheese, etc., their special food value. Eggs can, therefore, be substituted in the diet for the latter foods without materially altering the proportion of protein consumed. In addition to protein eggs also furnish fat and a number of valuable mineral elements, including sulphur, phosphorus, iron, calcium, and magnesium, in an easily assimilable form, and are believed also to be rich in certain essential vitalizing elements called vitamins.

Like milk and unlike meats, eggs do not contain substances convertible in the body into uric acid. Their shells constitute the only waste materials. Ninety-seven per cent of the portion eaten—a high proportion compared to other foods—is digested.



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Under all circumstances, the public demands adequate and dependable telephone service. To meet this demand throughout our territory, immense sums have been added to our plant investment during the last few years.

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The Mountain States Telephone and Telegraph Co.

No extended cooking is necessary for eggs and there is, therefore, a saving of time, labor, and fuel in their preparation when they are compared with many other foods. For all these reasons eggs deserve an important place in the diet for use at times in place of other foods rich in protein, provided egg prices are not so high as to outweigh the other considerations.

Though wholesome when fresh and clean, eggs may be decidedly unwholesome when old or dirty. The housewife should be careful when buying, therefore, to choose eggs which are as clean and fresh as possible. Similarly, the producer of eggs should keep nests clean and sanitary and should collect eggs frequently. It is also well to insure the production of eggs with good keeping qualities by producing only infertile eggs after the hatching season.

How to Select Eggs

In addition to cleanliness and freshness, the housewife should consider size and freedom from cracks. Eggs vary so in size that a dozen large and a dozen small eggs purchased at the same price per dozen may differ as much as 25 per cent in the value of the food elements furnished. Perhaps the fairest way to buy or sell eggs is by weight. Because of the wide variations in the size of eggs, it is also coming to be recognized that more accurate results in recipes can be obtained by weighing or measuring the eggs out of their shells. Cracked eggs are undesirable because the breaking of the shell makes possible the entrance of bacteria and filth.

HOME PRESERVED EGGS

Housewives will often find it advantageous to preserve their own eggs in the home, purchasing them when the supply is abundant and packing them in a solution of water-glass or lime water, or covering them with paraffin or varnish. Such eggs can be kept in good condition for a number of months. For current use fresh eggs usually can be kept satisfactorily for two or three weeks with-

out such treatment, in a refrigerator or dry, cool cellar. If infertile, such eggs may be kept still longer.

Mr. Merchant, in guaranteeing your goods, have you ever stopped to realize that the only real valuable guarantee is the one that should be entirely unnecessary? If your service and business is what it should be, it will radiate a confidence that automatically guarantees the things you offer the public.—Merchants Trade Journal.

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SUGAR BEETS

THE VALUE OF THE BOY AND GIRL

Right now is the time to give attention to the boy and girl who are old enough to assume responsibility. Proper care should be exercised in the organization of the family so that each will receive the recognition due him. There is no doubt in the world but what the greatest asset to a farmer is his boy or girl, and when directed properly they will bring results that should be participated in mutually. Thousands of boys and girls love the farm because the home environment is such that no conflict is permitted to exist; there is organization, there is understanding, there is freedom, there is confidence and the whole system is in sympathy. If the boy wants 50 cents for spending money he knows he can get it without the embarrassment of being asked by a disgruntled parent what he wants it for and how he is going to spend it, etc. This also applies to the girl, if good work is expected of the boy or girl the parent must inspire confidence. He must make the boy feel that he is worth while and that his labor is the result of appreciation and confidence. There are thousands of boys and girls who leave the farm because the parents have lost sight of the vital elements that grow into their—the children's—lives that make them like the farm work. Now is the time to organize the family into a splendid working system. Schools have been dismissed for the summer and the boys and girls are ready for work, providing they are properly organized. The sugar beet crop is unusually large this year, and where our boys and girls can be used they should be. Every dollar that these boys and girls make it must be remembered that it is a family dollar, and it adds just that much to the strength of the family. It should be impressed upon every farmer that to get his beets thinned properly and in time means all the way from two to six tons more to the acre. The use of the family can accomplish this. May the suggestion be offered—let every farmer feel that his boy is the greatest asset he has on the farm, and if properly directed will bring the greatest results.

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Book Department

THE UTAH FARMER

Lehi, Utah

Let him thin the beets in time and in the right way. Another thing can be suggested that will help the boy like his work on the farm. Sometimes it happens that the farmer is stingy, or very close with his family. It may help matters along very much if this feeling could be eliminated and all feel that they are mutually interested in the profits from the farm. The main thing, however, is to have our boys and girls love the farm, and there is no better way to bring about this very thing than to have a good family organization.

JOS. QUINNEY, JR.

THINNING SUGAR BEETS

The recent rains will aid in bringing through a rather uniform stand of beets. The frequent showers will reduce the risk of soil crusting and, therefore, if care is used in thinning, there will be but little excuse for poor stands. Insect pests and "damping off" (Phoma betae) sometimes destroy an otherwise good stand, however, even after thinning is completed.

Many growers do not realize that indifferent or careless thinning can easily reduce the yield 25 per cent in tonnage.

It has been clearly shown that leaving the strongest plants and pulling out the weaker ones may influence yields one-fourth. A study of a field will show a goodly number of plants that pushed their way through the soil ahead of other plants, even where moisture conditions and soil conditions are identical. There is stronger vitality in some seed than in others. These plants which show through the soil first are also the first plants to spread their roots and begin feeding upon the available plant food first. Their rootlets have an advantage over those which develop later. The stronger roots soon begin to rob the weaker. The same fundamental applies to practically all other crops, particularly corn, and it emphasizes the importance of a uniformly high germinating power in the seed.

Reason leads to a prompt conclusion that it will pay generously to use care in leaving the largest and strongest plants at thinning time.

This season when help for the hand work is unusually scarce, there will likely be a larger than common amount of thinning done by women and children. This means that instead of blocking and thinning in one operation, as in the case where adult help is used mainly, it will be better to have a man to do the blocking, using a long-handled hoe. It is easier to watch for and leave the largest plant in the bunches, when working in a standing position. The eye quickly becomes trained and a slight variation of an inch or two can easily leave the most vigorous plant instead of the weaker. Those who do the thinning, after the blocking is done, will have little excuse for not leaving the strongest plant.

Stay on the Job

The grower with rather a large acreage cannot afford to be away from the field while the beets are being thinned. There are no jobs on the farm where the boss will earn such generous cash returns as constant vigil and patient supervisory work among the thinners.

A very great deal of labor can be saved and more efficient work can be done at thinning if the cultivator has been kept going ahead of the thinners. With but few exceptions, it will be found a good practice to cultivate a second time and then roll the land, just ahead of thinning. Better not run the roller too far ahead, as a heavy rain after the roller and ahead of the thinning is liable to unduly pack the soil. Then immediately following the thinning, cultivate again. This is especially important if the weather is hot.

Knock Out the Weeds

In order to get rid of the weeds it is imperative that the soil in the beet row be stirred vigorously at thinning time. This often pulls the soil away from the remaining young beet plants and, on hot days, the exposed plant will usually lop over and wilt in a short time. This is rather hard on the young beet, but it also means that the weeds have been thoroughly upset. The following morning, it is very likely that all of the wilted plants have straightened up. If they have not, the stirring of the soil and the exposure of the young beet has been too drastic and bad results may follow.

Do It on Time

Do not fail to follow with the cultivator the very next morning after thinning. This will bring fresh dirt to the small beet plant and there should follow a prompt vigorous growth. Many times beetgrowers have sacrificed from two to four tons per acre by not using the roller and the cultivator at the right time and continuously with the thinning. A very great deal has been said, every year, about this time, about not leaving "doubles," which is extremely important and also urging that uniform spacing be done, which is also important, but it is more important that the strong plants be left and that the roller and cultivator be kept going in the right way.

When the plant is stunted, insects and worms give much more injury. If the weather turns cold, "damping off" is liable to set in. This "damping off" is recognized when the outer portion of the root shows brownish.

About the only remedy is to cultivate and cultivate still more. Stir the warm air into the soil and aid in getting the blood circulating. Everyone knows the value of a hot water bottle for many ills. Cultivation, particularly for the sick young beet, is similar to the hot water bottle for some human ills. Better to prevent a pig from getting runty than to coax profits out of a stunted pig.

Humanity in Plants

Plants have habits not greatly different from animals, and I have often thought that a lot of humanity has been incorporated into the habits and characteristics of plants as we have developed and improved them, and it is very certain that the more highly developed the plant or creature, the more susceptible they are to adverse environments. The wild beet takes care of itself in the woods or by the roadside, but it does not yield a very large tonnage and the sugar content is low. The wild oat grows without care, but it is mostly leaves and stem and yields but little real food in the grain. The wild crab does not call for pruning and cultivating and spraying as does the improved varieties, but the wild crab does not yield very much of a crop of fruit and it is not of much use to mankind.

The sugar beet is a highly developed plant and it deserves to have intelligent care and cultivation, particularly the first six weeks after the seed is planted. From that time on it will stand a lot of grief without serious injury.

There is some danger in thinning beets too early, but there is far greater danger in thinning too late. When the plants have set the third pair of leaves, the roots have spread so much that the pulling out of the beets at thinning time greatly disturbs the plant that remains. Better offer a premium for overtime than to delay beyond the safety point in thinning. The beets that are thinned too late have a handicap for the season that will reach deep into the profits of the grower.

Where beets are late, leave the stand a little closer than common. This will hasten maturity in the autumn. Most soils, with average available fertility, will give the largest yields if spaced about 12 inches in the row; rows 18 inches apart. More fertile soils may be spaced 10 inches in the row and the less fertile soils may be spaced about 15 inches. In any event, many things may hap-



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Utah Cereal Food Co.

Ogden, Utah



Kind of Trees and Shrubs to Plant

Following is a list of a few shrubs which are very well adapted to this state: (The letters D (Dwarf); S (Small); M (Medium), and L (Large), are given as a guide in regard to the size of the shrubs.)

Botanical Name	Common Name	Color	Size
Flowering in April—			
<i>Forsythia fortunei</i>	Golden bell	Yellow	L
<i>Spiraea thumbergii</i>	Thumbergi spirea	White	S
Flowering in May—			
<i>Berberis thumbergii</i>	Japanese barberry	Yellow	S
<i>Cydonia japonica</i>	Japanese quince	Scarlet	M
<i>Ribes aurea</i>	Missouri currant	Yellow	M
<i>Syringa vulgaris</i>	Common lilac	Pur., white	L
<i>Viburnum opulus sterile</i>	Snowball	White	L
<i>Spiraea von Houtte.</i>	Bridal wreath	White	M
Flowering in June—			
<i>Berberis vulgaris</i> (Atroporpurea)	Common barberry	Yellow	S
<i>Berberis vulgaris</i>	Purple leafed	Yellow	S
<i>Deutzia crenata</i>	Deutzia	Pink	L
<i>Deutzia lemoinei</i>	Lemoine deutzia	White	S
<i>Lonicera tatarica</i>	Bush honeysuckle	Pink	L
<i>Philadelphus coronarius</i>	Mock orange	White	L
<i>Ligustrum medium</i>	Privet	White	M
<i>Cytisus laburnum</i>	Golden chain	Yellow	L
Flowering in July—			
<i>Cornus paniculata</i>	Dogwood	White	L
<i>Dervilla candida</i>	Veigelia	White	L
<i>Dervilla Eva Rathke</i>	Veigelia	White	M
<i>Lonicera Mornawell</i>	Honeysuckle	Crimson	M
Flowering in August—			
<i>Althea</i> in variety		Yellow	M
<i>Hypericum aureum</i>	Rose of Sharon	Various colors.	M
<i>Spiraea, Anthony Walever</i>	Hypericum	Yellow	D
Flowering in September—			
<i>Althea</i> in variety	<i>Spiraea</i>	Pink	D
<i>Hydrangea paniculata</i>	Rose of Sharon	Various colors.	M
<i>Amorpha fruticosa</i>	Hydrangea	Pinkish	S
Bushes With Variagated Leaves—	Indigo	Dark blue	M
<i>Sambucus nigra fol. var.</i>	Elder berries	White, green	L
<i>Prunus plasard</i>	Prune	Purple	L
<i>Acer japonica</i>	Japanese maple	Purple	S
<i>Berberis vulgaris</i> (Atropur-purpea)	Barberry	Purple	S
Winter-berried Bushes—			
<i>Berebris thumbergii</i>	Japanese Barberry		
<i>Berberis vulgaris</i>	Common Barberry		
<i>Viburnum opolus</i>	Cranberry		
<i>Rosa multiflora</i>	Many flowered rose (single)		
<i>Rosa regusa</i>	Japanese Rose (single)		

During the process of planting the

MODERN THRIFT

"Yes," replied Mr. Chuggins. "In a little while I expect to have enough to buy a brand new top for my automobile."—Exchange.

Cut Your Feeding Costs

Salt Lake.

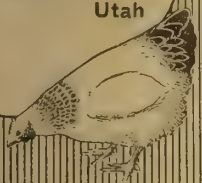
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Golden Harvester Machine Oil

is a tested and tried oil, and makes good under the most trying conditions. It minimizes your carbon troubles and reduces wear and tear and cost of oil.

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POULTRY

CARE OF THE SMALL FLOCK

For the family which wishes to keep poultry for home consumption rather than for the market, the so-called general-purpose breeds are better suited than what are known as the egg-laying breeds. Plymouth Rocks, Wyandottes, Rhode Island Reds, and Orpingtons are all good varieties for the average person who does not intend to go into the poultry business on a considerable scale. These breeds are good layers and they also make good table poultry. Furthermore, they will hatch their own eggs and brood their own chickens, whereas, the Leghorns and other breeds of the egg-laying class do not sit, and the use of expensive incubators and brooders is necessary in order to perpetuate these flocks.

The prime essentials for a small poultry house are fresh air, dryness, sunlight, and space enough to keep the birds comfortable. For the general-purpose breeds about 4 square feet of floor space should be allowed for each bird. The fowls should also have as much outside space as possible to run in. If this area is too small the ground quickly becomes foul and in time makes it difficult to rear chickens with good success. In order to avoid foulness it is advisable to divide the lot and to sow part of it to the quick-growing grains such as oats, wheat, or rye. The hens are turned on to the growing grain when it is a few inches high. Under this method the yards may be changed every three or four weeks during the growing season. A combination that has proved successful consists of 6 or 7 bushels of equal parts of oats and wheat to the acre, wheat alone being used for the last seeding in the fall. For the convenience of those who have only small areas at their disposal, it may be stated that an acre contains 43,560 square feet.

To secure satisfactory number of eggs the fowls should be fed both a dry mash and a scratch ration. The dry mash may consist of equal parts of corn meal, bran, middlings and beef scrap. This should be kept before the birds in a hopper, all the time. A good scratch ration is made up of equal parts of corn, wheat, and oats, fed in a litter 4 to 5 inches deep, twice daily. It is desirable that the birds should eat about as much of this as of the mash. This means feeding about 1 quart of mixed grain daily to 12 Plymouth Rock hens or to 14 Leghorns, and an equal weight of mash. Usually waste table products will also be available, and these may be made up into a moist mash in place of the dry mash. In this case the table scrap if it contains much meat, is substituted for the beef scrap. If it does not contain any considerable portion of meat, it should merely be added to the dry mash already described.

A WHEATLESS EGG-

LAYING RATION

With wheat so high, poultrymen will be interested to learn that on the United States Department of Agriculture experiment farm excellent egg-laying results were secured with a wheatless ration. Thirty Leghorn pullets to which this ration has been fed for 1½ years produced an average of 147.3 eggs per hen for the pullet year. This compares favorably with egg yields secured on other rations containing wheat and therefore more expensive. This pen, moreover, during the first 16 weeks of its second year has averaged 28.5 eggs per hen, 17.5 eggs per hen being produced in March.

The same wheatless ration has been fed since last November to a pen of Buff Orpington pullets which have laid 53 eggs per hen in 20 weeks, and hold the highest egg record of any of the large feeding pens of pul-

lets at the farm this year. Two other pens, however, are less than 1 egg per hen behind this pen.

The ration used was as follows:

Scratch Mixture.

2 pounds cracked corn.
1 pound oats.

Dry Mash.

3 pounds corn meal.
1 pound beef scrap.

The scratch mixture was fed sparingly so that the hens ate about equal parts of this mixture and of the dry mash. The total grain consumption of feed for the year was 52 pounds, of which 26 pounds was scratch mixture. Throughout the year it took 4.6 pounds of feed to produce a dozen eggs.

This scratch mixture, with wheat \$2.57, cracked corn \$1.35, and oats 70 cents per bushel, is 49 cents per hundred pounds, cheaper than the regular mixture of equal parts cracked corn, wheat, and oats. Another mash which is slightly cheaper than this one, is made of 4 per cent each bran and middlings, 26 per cent beef scrap, and 66 per cent corn meal.

If the wheat is omitted from the ration it is very essential to feed a considerable proportion of beef scrap in the mash, but with present prices, beef scrap is one of the cheapest poultry feeds, considering its high protein content.

These experiments, the specialists say, prove that wheat is not essential in egg-laying ration and that excellent results can be secured by using corn and oats as a scratch mixture provided this is fed with a good mash containing 25 per cent beef scrap.

HOW TO WIN SUCCESS WITH POULTRY

Michael K. Boyer.

Ordinarily a man who for over 30 years has made an occupation a constant study and practice, has become master of it. But it is not so in poultry culture. Each year brings new experiences, new ideas, new inventions, new methods and new systems. No man in a lifetime can keep up even with an industry that is so wide awake and progressive. That at least has been my experience, after making poultry farming my occupation for over thirty years.

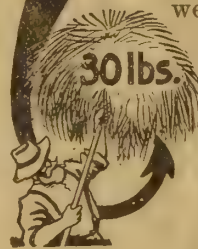
The average beginner, however, at the end of the first year in business, congratulates himself upon his aptitude. By the time the second year rolls around he is satisfied that there is very little that he does not know. But at the end of the third year he is beginning to realize that he is only a beginner, or he may make up his mind that the business is a farce, and that there is no profit in it.

Begin small, go slow, enlarge as experience will permit. Upon that foundation successful poultry farms have been erected. How few follow it. Men who would not think of undertaking any other business on a large scale without the proper experience, will often plunge into poultry in a capacity far in excess of their knowledge or working capital. Then, after meeting with all sorts of reverses, they close up the plant and advertise the fact that "poultry is a failure." So it is in the hands of men of that caliber.

Over 30 years ago I began poultry culture as a means of livelihood. I kept poultry as pets when a boy, but it was not until later in life that I took up the work more seriously. My first steps were with bantams, then as years rolled on my father advanced me up to the Black Spanish Class. Father bought the feed for my chickens and I had to perform all the labor. For every egg I turned over to mother he gave me three cents. Many a valuable lesson I learned from the care of those fowls. Oats and whole corn and scraps from the table constituted the bill of fare. Nothing else seemed available. In those days we knew practical-



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The Loudon Balance Grapple Fork, with its 5-foot spread and its 24-inch tines, lifts an enormous load, binds it tight, drops it clean and spreads it well in the mow. It leaves no litterings to clean up with a pitchfork. Three or four forkfuls clear the rack. Time? Five minutes!

There is nothing complicated about Loudon Hay Tools. They are simple, sturdy, common-sense tools,

built to handle big loads quickly and easily, and to save time and labor in hay harvest. Equally valuable in field or barn.

Do it the quick, easy and economical way this season. The saving of a few hours in getting your hay under cover may save you many times the cost of your Loudon outfit.

The Loudon Line Includes:

Hay Tools.
Barn & Garage Door Hangers.
Steel Stalls & Stanchions.
Litter and Feed Carriers.

Horse Barn Equipment.
Animal Pens.
Water Bowls.
Cupolas and Ventilators.



MILLER-CAHOON COMPANY

Murray, Utah.

Idaho Falls, Idaho.

ly nothing about mashes, and balanced rations, and all the scientific methods of feeding that have since sprung up, and which are such great helps.

These improved methods in feeding has made the winter egg possible. In my boyhood days the winter egg layer was a dream. It was also so with the incubator and brooder. Little did the poultry keepers of that day believe that artificial methods would ever be adopted as the most important accessories. Today it would almost be impossible to find a well-regulated plant without these machines.

But about the greatest reform I believe has been in the manner of housing. I saw more sickness among poultry in my boyhood days than I have since I have made the care of fowls a study. I honestly believe that two-thirds of disease were occasioned by improper housing. The theory seemed to be that comfort alone could be secured in houses built close and tight in winter. It never occurred to our forefathers that fresh air must be the rule in planning the henneries. There seemed to be two extremes: one, the close houses; the other, the fowls permitted to roost out doors on tree limbs, or in the wagon shed on the farm implements. Both extremes are wrong. The open-front house, as adopted today, has been a god-send to both the poultry and the poultrymen. It means less colds, more hardy, vigorous stock, and, consequently, better return in eggs. The open-front house admits pure air without drafts.

Another considered incentive to egg production was the male bird. It was believed that a flock of hens without a male would not be productive. Today the males are conspicuous for their absence on all the big egg farms of the country.

Chickens and men were not strongly identified in those days. It seemed as though men were ashamed to have more than a passing interest in fowls. Should the conversation lead to poultry topics, and experience cited, it was sure to be declared the work of the woman. "My wife has a pen of hens", etc., acted as a sort of apology—it was mentioned so that not for a moment the idea might exist that the man would take a personal interest in chickens. Once in a while some brave

fellow would make an attempt "in his own name," hoping against hope that he could thereby establish an occupation. He was sure to be the butt end of a joke at the corner grocery, and his failure was predicted as an event of the near future. The prediction as a rule came true—due to the crude methods then in vogue.

But, it must be said in justice to our forefathers, some of the grandest ideas we have today originated in their time, but our forefathers treated them as dreams. Take for instance, our open front scratching sheds. Not that it was thought the proper thing to "expose" fowls to fresh air, that hens roosted in the wagon shed. It was for the reason that "no sane man would throw away his time and money" to do much in the way of putting up buildings.

Nevertheless, the fowls that were kept in the wagon shed were about the only ones that seemed to keep in good health. This fact seemed to grow with each generation of poultrymen, until today, we have the sanitary house a reality, built upon the experiences of the wagon shed.

So we keep on learning. The next decade will, I believe, laugh at our present day methods. They will solve problems that to us today are matters of great concern. They will point out a way of doing things that will save time and money, and not the burden that is our lot. They will bring our breeds up to standard that will put our highwater records in the shade. They will develop facts that today are dreams—just as we brought to light the visions of our forefathers.

"Rastus, what's a alibi?"

"Dat's proving dat yoh was at a prayer meetin' whar yoh wasn't, in order to show dat you wasn't at de crap game whar yoh was."—Life.

A music publisher the other day received from a young girl in one of the small towns a touching little ballad of her own composition, entitled "I Wonder if He'll Miss Me?"

He returned the effort to the sender with the following note:

"Dear Madam: If he does, he ought never to be trusted with firearms again."

Here and There On The Farm

PROPER TILLAGE IMPORTANT
Elmer Knudson.

Land values are climbing skyward. Government statistics show the average value of all farm lands in the United States to have advanced over 60% in the four years 1912-16. It is becoming pretty plain to the man on the land that every acre must yield to the limit if he is to make a fair interest on this larger investment and still have a respectable labor income for the "sweat of his brow."

A labor income is the clear money you have left after paying all operating expenses and 5% interest on the capital invested. This is the reward to you as a business man for managing the farm and for your own labor. It has been shown that many a hard-working farmer is not making any labor income whatever while his neighbor on the same type of soil may be making \$1,000 or more yearly. Those chaps who delight to dig into statistics and "make figures talk" have uncovered several reasons why one farmer works hard and stays poor while his neighbor works no harder—maybe not so hard—and gets rich.

The four big factors that determine a farmer's labor income are, size of farm, diversity of crops, quality of live stock, and efficient tillage.

One could write a book on this subject. So in this little talk we'll confine ourselves to just one of those big main factors that determine whether you are travelling the upward road that means lifted mortgages and money for autos or the downward road which soon makes the "shoe pinch."

Let us then consider what efficient tillage means and just how you can practice it on your own farm. Efficient tillage is growing big crops at low cost. And don't forget the low cost part; that's just as important as bumper yields.

The first step in good tillage is, of course, the making of a perfect seed bed. Prof. King in his excellent book, "The Soil," explains just what should be accomplished by plowing and harrowing.

1. Develop and maintain a suitable home for the root systems of the crop plant.

2. Increase the soil humus by thoroughly working in organic matter. This favors the growth of soil "yeast" and increases the ability of the soil to hold water.

3. Control the amount and movement of soil moisture.

4. Provide an abundant supply of air for the use of plant roots.

5. Preserve plant food and moisture by destroying the weeds.

6. Prevent loss through surface washing. These are the leading reasons why you must plow and harrow. To apply these principles, however, to one's own conditions takes experience and sound "horse sense."

The depth to plow is a problem which can never be settled by rule. Much depends upon the root habits of the crop, the kind of soil, and the climate. It may be safely said, though, that there is little danger of plowing too deeply for most crops if ordinary good judgment is used. If the soil is quite shallow one can turn up a thin layer of sub-soil each year working it in thoroughly with the upper soil.

After the plow has left the grounds broken into long brown ribbons you are ready for the harrow. And right here let us say, the quicker the furrow is broken down, the better. Vast quantities of soil water are often lost through evaporation by delaying the harrowing even for a few days. Besides, if there is a considerable percentage of clay in the soil, the wind and sun will dry out and bake the furrow slices into clumsy clods. Such clods greatly increase the labor and hence the cost of making the seed bed.

It should be harrow well following

the plow as soon as possible. The harrow is one of the most important tools we have in our farm work. One that is not used near as much as it should be. To keep the seed bed free from weeds and well worked down can be done with a good harrow. Harrowing will increase the production of nearly any crop if done at the right time. It will loosen up the soil and let the air work down and it helps to form a good mulch thus conserving the water supply or moisture.

HOW TO MAKE AN
ICELESS REFRIGERATOR

Refrigerators can be made to do their part in conserving food this summer. Preserving milk, butter and other supplies and keeping leftovers and unused portions until they are needed will be their service. If ice is not obtainable, an iceless refrigerator, cooled by evaporation, can be easily constructed. The U. S. Department of Agriculture, tell how to make such a cooler at a small cost.

This refrigerator consists of a wooden frame covered with Canton flannel, burlap or heavy duck. It is desirable that the frame be screened although this is not necessary. Wicks, made of the same materials as the covering, resting in a pan of water on top of the cooler, conduct the water over the sides and ends of the pan and allow it to seep down the sides of the box. The evaporation from this moistened covering causes a lower temperature inside. On dry, hot days a temperature of 50 degrees has been known to be obtained in the cooler. This is the way to build it.

Make a screened case 3½ feet high with the other dimensions 12 by 15 inches. If a solid top is used, simply place the water pan on this. Otherwise fit the pan closely into the opening of the top frame and support it by 1-inch cleats fastened to the inside of the frame. Place two movable shelves in the frame, 12 to 15 inches apart. Use a biscuit pan 12 by 14 inches on the top to hold the water, and where the refrigerator is to be used indoors have the whole thing standing in a large pan to catch any drip. The pans and case may be painted white, allowed to dry and then enameled. A covering of white Canton flannel should be made to fit the frame. Have the smooth side out and button the covering on the frame with buggy or automobile curtain hooks and eyes, arranged so that the door may be opened with out unfastening these hooks. This can easily be done by putting one row of hooks on the edge of the door near the latch and the other just opposite the opening with the hem on each side extended far enough to cover the crack at the edge of the door, so as to keep out the warm, outside air and retain the cooled air. This dress or covering will have to be hooked around the top edge also. Two double strips one-half the width of each side should be sewed on the top of each side covering and allowed to extend over about 2½ or 3 inches in the pan of water. The bottom of the covering should extend into the lower pan.

Place the refrigerator in a shady place where air will circulate around it freely. If buttons and buttonholes are used on the Canton flannel instead of buggy hooks, the cost will be reduced.

GREEN FEED FROM
SHADED GROUND

In yards of limited space soil usually idle may be put to work for chickens.

If there is a shady spot in the back yard not suited to other garden crops, it may be possible to grow some green feed for the chickens on it. Oats and fields peas, before the hottest weather comes, and millet and cowpeas later in the summer, if sown thickly, probably will yield cuttings of feed that

A Sure Tier In Tall or Short Grain

For delivering well-tied, square-butted bundles, bound anywhere from seven inches to twenty-five inches from the butts, no binder made can excel the

Moline-Adriance Grain Binder

Cutting apparatus is the heaviest and strongest made—heavy guards will not break or bend when striking obstructions.

All working parts driven direct—strain is equally divided. Light draft, easy control, long life.

Ask your Moline Dealer or write us for illustrated literature.

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THE MOLINE LINE
Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Sowers, Listers, Manure Spreaders, Mowers, Plows (chilled and steel), Reapers, Scales, Seeders, Stalk Cutters, Tractors, Farm Trucks, Vehicles, Wagons.



will be much relished in the small hennery. While such a practice may not be in harmony with the best cultural advice, many city dwellers with limited space will wish to utilize all available garden room this season, even for only small returns.

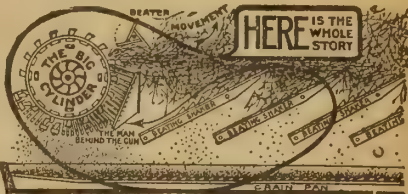
Dense, continuous shade under old trees and shrubbery that have drawn heavily on soil plant food, obviously will be of little value for this purpose. But in many back yards ground shaded by buildings and small trees, not wholly removed from the day's sun, might well be expected to produce some green stuff for a small flock. If the chicken pen is large enough a small sowing made inside and protected by woven wire with one-inch meshes stretched about two inches above the ground may be made. This allows the chickens to pick off the green blades as they grow through the netting without injuring the roots.

Another way to furnish green feed to hens not on range is by sprouting oats in trays or boxes. This method is used by many poultrymen, for large and small flocks. The oats are soaked for twelve hours in warm water and then spread out in a layer ½ to 1½ inches deep on a floor, or in a tray or tier of flats, which have openings or holes or a ¼ inch mesh wire bottom covered with burlap, so that the water drains freely. The oats may be stirred daily and sprinkled or allowed to sprout without stirring until ready for feeding. They are usually fed when the sprouts are from 1 to 1½ inches long, although some poultrymen prefer to allow the sprouts to grow 2 or 3 inches long before feeding. Oats need a moist and warm atmosphere in which to sprout quickly, so that it is necessary to furnish heat or to keep them in a warm room during the winter, while they may be sprouted out of doors during the rest of the year. It takes from 6 to 10 days to sprout oats, depending on the temperature. The oats are fed, roots, sprouts and all, at the rate of about one square inch, as they grow in the tray, to each fowl.

THE USEFUL BY-PRODUCTS

The various by-products obtained in the manufacture of beef, pork and mutton are selling at such high prices that they perform the double function of increasing the hoof value of all live stock to a point far above any previous prices ever paid and of enabling the manufacturer to sell the meat to consumers of comparatively moderate prices. Both the producer and the consumer of meats benefit through inflated values of secondary products, ordinarily given little thought. One large packer gave as a reason why they could pay such a large dividend last year was "due principally to the exceedingly high prices of by-products, especially hides, greases and oils," and "notwithstanding that live cattle prices are higher than they ever were before, dressed beef prices are very little higher than they have been in recent years."

The hide is the chief item of by-products from cattle, the pelt from sheep and lambs. In the case of



More Grain for the Farmer; More Profits for the Thresherman

THE Red River Special saves the farmer's high priced grain—and saves the thresherman's time. It beats out the grain. Most threshers wait for the grain to drop out. The big cylinder, the "Man Behind the Gun" and the beating shakers do the work just as you would do it by hand. Write for literature on the

Red River Special

If you are a thresherman, learn how you can get the big money-making runs. Crowd more bushels into the day's work—more good jobs into the season's run.

If you want a thresher for your own use, learn about our Junior Red River Special, the small thresher built with the efficiency of big high power machines. Hook it to your tractor or gasoline engine. Saves the grain like the Red River Special. Makes home threshing pay. Built for long service—has large, strong shafts, wide belts, strong frame. It saves the farmer's thresh bill. Write

Nichols & Shepard Co.
In Continuous Business Since 1848
Builders Exclusively of Red River Special Threshers, Wind Stackers, Feeders, Steam Traction Engines and Oil-Gas Tractors
Battle Creek Michigan

hogs the fat leads. One authority places the value of the hide of one head of cattle weighing 1,000 pounds on the hoof at \$23, fats from the same animal \$11.74, other items combined \$5.66, total \$40.40, about 40 per cent of the live cost of the animal. The pelt of a choice lamb is alone worth \$3.50 or more, about 35 per cent of the live cost. The hog produces prime steam lard, leaf lard and No. 1 grease to the value of one-fourth its live cost.

An attempt to get away from expensive leather is seen in spring and summer styles of shoes this year, which run more to cloth tops than heretofore. Substitutes for leather soles of shoes are much in use. These evasions will help the economically minded, but will probably not reduce the price of hides. The high price of butter is making it easier to advance the sales of oleomargarine. Prices at the stock yards show a tendency to advance even above present levels, and meat consumers may soon feel the effects in higher prices, there being a limit to the protection to be expected from big prices for by-products. But the producer of meat bearing animals apparently has a cinch.—Exchange.

FIRST FEDERAL FARM LOANS IN UTAH TO BE CLOSED BY JUNE 25

The two following telegrams are self-explanatory and will be of interest to the farmers of the state. Francis W. Kirkham is president of the Riverton Farm Loan Association and vice president of Salt Lake County Farm Bureau, and Howard V. Alston is secretary of the Utah Federated Farm Bureau.

Salt Lake City, Utah, May 24.
Dr. George Thomas, Treasurer Federal Land Bank, Berkeley, Cal.

Many farmers need money badly to to prepare for cropping on larger scales next year. Can you not give us assurance as to the time your loans will be available? This uncertainty prevents borrowing elsewhere. We want to know something definite, so as to govern ourselves accordingly. Wire reply.

FRANCIS W. KIRKHAM,
HOWARD V. ALSTON.

Berkeley, Cal., May 25.

Francis W. Kirkham, Salt Lake, Utah.

First loans in Utah will be closed within thirty days and bank will continue making loans until all demands within farm loan act are satisfied, depending, however, upon bond sales, which are now satisfactory. Your requirements should be reasonably met.

BURRELL G. WHITE,
President of Federal Land Bank.

SWEET CORN

Sweet corn should always be found in the garden when space allows, since it loses quantity very rapidly after being picked. Its sugar changes into starch, so that to have it at its best it should be on the fire within fifteen minutes after being pulled from the stalk. Those who wish to have home-grown sweet corn will find the following advice useful:

Corn does best in a fertile soil, but is able to adapt itself to all textures from sand to clay. To grow it in sufficient quantities for the average family requires more space, however, than for most garden vegetables. It should not be planted until after danger of frost is past.

The rows should be spaced not closer than three feet apart, and for the larger-growing late varieties the distance had best be three and one-half feet. Stalks should be thinned to stand from fifteen to eighteen inches in the row. In planting, the seed is covered with one or two inches of soil. Cultivation must be thorough, frequent, and shallow.

It is possible to use the ground occupied by early corn for a fall planting of such crops as spinach, turnips, and kale. Large, late varieties, however, will occupy the ground for practically the whole season.

For early use the yellow sweet corns have recently become quite popular. Of these the Golden Bantam is a well-known variety. Early Minnesota has long been a favorite. White Mexican is a valuable early corn. Early Adams is a variety frequently grown for market, and its virtues are rather those of the market than of the table. It is a flint corn, not a sweet corn, but if used during the very short period when its qualities are at their best, its flavor is good.

For midseason and late use, Crosby, Potters Excelsior, Country Gentleman, Black Mexican, and Stowels Evergreen are suitable.

It is possible to have a fairly long season of useable corn if three varieties, such as Golden Bantam, Crosby, and Country Gentleman are planted simultaneously in early spring. To make the season continuous until frost, however, it will be necessary to plant some varieties at intervals of two or three weeks up to the last of July. Crosby is a very good variety for this purpose.

The strong flavor and odor of all the members of the onion family are due to the presence of allyl sulphid, an oil-like organic compound of sulphur. The flavor-yielding material is very volatile and is broken down by

To Buy

heat to some extent. Consequently, the cooked vegetable has a milder flavor than the raw.

THE NEW STYLE PATRIOT

Listen, my children, and you shall hear Of a patriot's work in this present year.

He didn't ride through the roads at night

To rouse the neighbors to arm and fight,

But he went to work with a spade and hoe

And he made ten bushels of 'taters grow.

He mopped the sweat from his beady brow

As he trudged behind his handpower plow;

His hands grew tough and his feet got sore

As he turned the stubborn furrows o'er,

And his neighbors laughed as they called him slow,

But he made ten bushels of 'taters grow.

Oh, cheer the boy with the sword and gun,

Who has fought and bled, when the war is done,

And cheer the generals and majors, too,

And the sailors bold on the ocean blue;

But cheer this man and his spade and hoe,

For he made ten bushels of 'taters grow.

—Edgar A. Guest, in the Detroit Free Press.

OPPORTUNITIES IN FARM LANDS

We have at Elberta, Utah, 50 acres of the finest farm and garden land in the West. It is a very suitable place for a man who wants a small farm at a reasonable price. Well adapted to raising any of the farm products, garden truck, alfalfa and beets. It is located on a railroad giving excellent shipping facilities, close to two mining camps, affording a fine market for garden vegetables, and is also near good schools. Just the kind of a place you will want. Prior water right at \$1.00 per acre if used. See us about this place and let us give you further details.

Another opportunity for the right party at Elberta, Utah, is a 50 acre farm, suitable for the growing of alfalfa, fruit, beets, grain, garden truck or any other farm products. The best kind of soil, with good water right at a reasonable rate. This property adjoins a good school and is located on a railroad. Will take \$3,750 for this place, with suitable terms for payment. This is a real buy for the man that wants a small farm at a good price.

For \$75.00 an acre you can buy 50 acres of Elberta's fertile land, with prior water right at \$1.00 an acre. What do you think of this buy. If you are looking for a small farm at a low price, investigate this further. We will be glad to furnish you with more information.

We are dealers in farm lands. Write us your wants.

W. C. ALBERTSON

604 Dooly Bldg.
Salt Lake City

CONSIDERATE

Clarence—"I passed by your house last night."

Dorothy—"I thank you."

Farm Loans

CURRENT RATES
FAVORABLE TERMS
LIBERAL AMOUNTS
ALWAYS IN FUNDS

MILLER & VIELE
803-807 Kearns Building
SALT LAKE CITY

FARMS

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

IDAHO RANCHES

120-acre irrigated ranch in best part of Idaho, seven mile from county seat and railroad; good ditches, 5-room house, barns, sheds, granaries, etc.; 95 acres alfalfa, 25 acres pasture, 40 acres fenced for hogs; place yields splendid crop; 8 head cows, 4 head of horses, 4 young heifers, machinery, etc. Price complete \$8,500. Terms, one-half down.

We have many such bargains on good terms. Write us.

FEDERAL LAND COMPANY,
Ogden, Utah

FARM FOR CITY HOME

100 acres in Salt Lake county. Good water right, excellent soil; farm is now in alfalfa, potatoes, sugar beets, cherries, etc. Good barn, cement silo, brick house, garage, electric lights, city water. This is an elegant property for someone in Salt Lake City who has a \$5,000-\$7,000 modern home on the east side which can be traded in as part payment. Total price, \$25,000. Terms.

CHICKEN RANCH

Ten miles from Salt Lake City. Five acres improved; 4-room modern house, garage; new modern poultry houses with capacity for 1,000 birds. Good water right. Sandy loam soil. Some fine fruit trees—cherries, peaches and apricots. Dewberries produced \$200 last year. Fruit will have an excellent market this year. Poultry netted \$500.00 in 1916. Owner in business in Salt Lake and cannot attend to it. A bargain for someone. Price \$3,700.00. Can also sell an additional 10 acres with water near by.

LAND NEAR FLOWING WELL DISTRICT

Good chance for artesian water. Sage brush land; 640 acres near Fillmore. Yourself and several friends could handle this nicely; \$5.00 per acre down, balance on time. Will accept part in trade. Price, \$17.50 per acre.

SALT LAKE BUNGALOW FOR FARM

Five rooms, modern, in southeastern part of city. Dark oak interior finishing. Owner wants to trade for unimproved irrigated land, with good water right, in northern Utah or southern Idaho. If you have something good, submit it. Price of home, \$5,000 clear.

FARM FOR SALT LAKE HOME

80 acres, good soil, fine water right, tile drained. Land in full bearing apples, wheat, oats, barley and sugar beets. Small house, fine barn. \$2,000.00 worth of equipment. Will trade for clear Salt Lake property, good home. Trade your Salt Lake liabilities off for an income property in the asset column. If you have a good \$12,000.00 proposition, call and see us.

FARM FOR SALT LAKE INCOME PROPERTY

340 acres in southern Idaho, part irrigated, balance dry farmed. Good rain belt. Ground in alfalfa and grain with balance ready for summer fallowing. Good house and barn with fence, farm equipment; 8 head of horses, 3 milch cows, open range adjoining. Will take Salt Lake income property on trade or can handle small acreage in country. This place is worth every cent of \$10,000.00. What have you?

ASHTON-JENKINS COMPANY
Salt Lake City, Utah

FOR SALE

640 acres with 168 acres wheat, 50 acres alfalfa, well, fence, 6 horses, harnesses, implements, etc.

800 acres, 320 pasture, 235 acres in wheat and some horses, etc. Will sell part or all. Price and terms reasonable. For further information, write

N. E. MILLER
439 So. Main, Logan, Utah.

FREE FARM LANDS

The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have offered several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our Committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah.

To Sell

RELIABLE FARM BARGAINS

Now is the opportune time to buy farms. We sold more farms last week than in any other week in our entire business career. People are realizing the necessity of buying farm lands. While prices are so high they may be able to pay for the farm in a very short time. It is up to the people of this country to feed the entire world for a few years to come. If you are interested in getting a farm that will pay for itself soon, we have the following to offer:

We have just bought 800 acres of land in Cache valley that is one of the finest farms in that valley. We are going to cut this farm into 40 and 80-acre tracts, to be sold on easy terms. Part of this land is in alfalfa, part of it in grain and the balance ready to be planted to sugar beets or other crops. All fenced, water piped, so it can be had for each 80 or 40 acres; on the main line of the railroad, and the county road passes through this farm. We will sell this land and you will get five tons of alfalfa per acre a year. At the present price of alfalfa and other crops, this land will pay for itself in a very short time. Price range from \$100 to \$150 per acre including water right and improvements. We will sell you from 1 acre to the entire tract.

A number of weeks ago we took over the entire holdings of the Keystone Steel & Wire company of Peoria Ill. This land is situated in the Bear River valley, right adjoining the town of Tremonton, one of the nicest little towns in northern Utah. This land consists of 40, 80 and 160-acre tracts. We have one or two of these pieces of land left.

In southern Idaho, on the main line of the Oregon Short Line, we are selling 40, 80 and 160-acre tracts of land at from \$50 to \$100 per acre including improvements and crop. This land can be had on ten year time at 6 per cent interest, with a small payment down.

On 14th South, just off the 5c car line we have some beautiful one-acre tracts for sale. \$450 per acre, \$1 down at time of purchase and the balance at 7 per cent interest. This is a good buy. If you are looking for something to raise your foodstuffs, it cannot be beat.

We have on our listings and own ourselves at the present time several million dollars' worth of first-class property. We feel sure we can suit you as to location, price, terms and improvements. If you are looking for a first-class farm, cattle ranch, we have got what you want. Write, telephone or come in and see us.

We exchange farms for Salt Lake City property.

KIMBALL & RICHARDS
"Land Merchants"

56-58 Main Street
Salt Lake City, Utah
Phone Wasatch 963

FARM AND RANCH DEPARTMENT

FOR SALE

In Boxelder County, 50 miles from Brigham City, 960 acres of land, 800 under cultivation, 400 in fall wheat, about alfalfa, 12 head horses, harnesses, machinery, buildings, well and equipment. Price and terms reasonable. For particulars write

MILLER BROS. FARM CO.
394 S. M., Logan, Utah.

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

TWELVE HEAD JERSEY COWS
PRODUCING FROM 250 TO 400 POUNDS
FAT PER YEAR. WILL BE SOLD
AT FARMERS PRICES.

ROE A. IDEAL

Springville

Utah

Hatching Eggs 20% Off.

A few White Leghorn Breeders at
half January prices.

BATES & SON, GUHAMA FARM
Provo, R. F. D. No. 1, Utah.

GROWING OF BEETS IS BENEFIT TO YOUR FARM

Besides providing an absolutely cash crop, a certain market, the growing of sugar beets, the Utah and Idaho, also provides one of the best means of fertilization through crop rotation. Agricultural experts agree that root crops are essential in good farming—sugar beets provide the safest, surest, cash producing crops of its kind.

USE TABLE AND PRESERVING SUGAR

IMPORTANT FACTORS IN DRY FARM PLOWING

(Continued From Page Three)

turned up in the process of plowing. Better to spend double the time or do half as much and do the job right, than to leave one-fourth to one-half of the brush uncut, as we sometimes see on newly plowed brush lands. The standing brush on such lands is a sure indication of bad plowing and a waste of time and energy. The results in crops from half the acreage properly plowed would be greater and far more satisfactory, besides being a saving in seed and harvesting expense. We need a better job of brush plowing in Utah. This will do as much as anything to "whip" away the discouragement that confronts the "unlucky" farmer at the first harvesting.

Beginners, work the soil well with the plow—every inch of it—not merely scratch the surface, and at least get down deep enough to successfully subdue the brush, before attempting to plant the first crop. It will pay you and pay you big.

If the ground is properly cleared early in the spring as set forth in a previous article, it will retain the moisture far into the summer and prolong the period for favorable plowing conditions when the plowing is done right and early in the season while the ground is moist, it can be planted with profit in the fall, but if left until dry and hard it is both more difficult to plow and more dangerous to plant the same year, and would be better to lie over until the following planting season.

Plowing Stubble or Cropped Lands

To obtain best results the stubble lands should be double disked, spring toothed or spike toothed soon after the crop is harvested. The disk is much preferable. This operation will serve to check evaporation, destroy the weeds and to chop the stubble and incorporate it with the soil. Should a rain come it will the more readily hold it, and when plowed the land will be more friable and consequently plow easier, whether plowed in the fall or spring.

It makes little difference whether the stubble be plowed early or late in

FOR SALE

Single Comb White Leghorn
Hatching Eggs from bred to lay
stock. Our thirteenth year
Prices right.

MODEL POULTRY FARM
Corning California

YOUR OPPORTUNITY

200-290 Eggs. Early Maturing, Winter Laying Leghorns. Anconas, Reds; W. Barred Rocks; W. Buff Wyandottes; Buff Orpingtons. \$3-\$10 yearly profit per hen. During May and June: Eggs half, chicks fourth off. Few pens all breeds, at bargain to make room. Guarantee you profit with feed high.

J. BEESON

Pasadena

California

DUROC-JERSEY BOAR PIGS

that are registered and from the world's greatest families being grandsons of the \$5,000 DEFENDER and the \$2,000 ILLUSTRATOR. Spring pigs \$15.00 each and boars of serviceable age \$35.00 each, that are CHOICE.

Satisfaction or Your Money Back.

EDWIN BRICKERT

Beaver

Utah

SAVE MONEY ON YOUR LUMBER
BILL. WRITE US. PACIFIC COAST
SAWMILL COMPANY, Portland, Oregon.

RAG APPLE KORNDYKE 13TH

BULLS FOR SALE

From A R O dams which we are offering
at reasonable prices, write us.

NELSON BROS.

Richmond

Utah

the fall, so long as the plow does good work. On some lands it is difficult to keep the plow in, they being so compact and hard. Often a good disc plow will do the work where the mouldboard fails and sometimes it is advisable to leave such lands until sufficient rains comes to moisten them. If such lands be disked as soon as the crop is removed and left for a few weeks they will very likely yield to the plow and give far better results in yields, giving good compensation for the extra labor.

Fall plowed lands generally show a roughness and coarseness not observed in spring plowed lands, but need not be harrowed or work down. Better for them to lie in the rough during the fall and winter months and let the elements pulverize and work them down. After the action of the rains, air, frosts, etc., the lands are readily fined and compacted with the spike tooth harrow early in the spring.

In the propaganda of dry-farming fall plowing has been emphasized and encouraged because of the fact that extensive tracts have to be operated to get beneficial results, the plowing being fully twenty-five per cent of the total cost of producing the crop, and if left until spring could not all be accomplished in proper season.

The advice still holds good and dry-farmers should plan to do from two thirds to three fourths of the plowing in the fall, and thereby keep ahead of their work.

Spring Plowing.

There are two very vital things that enter into spring plowing that make for efficiency. Generally they are disregarded by the average farmer, perhaps from lack of knowledge. The wise husbandman will recognize the virtue of moisture and temperature in the cultivation of the soil. As plowing is the first and most important operation in soil culture the influence of moisture and temperature is likewise most potential either for good or evil. A soil that is dry and hot is more or less resistant to the forces that make for beneficial effects. While the cold and wet soils are stubborn and more or less dormant. Plowing the soil when in either of these ex-

LUMBER, MILLWORK, FENCE POSTS, wholesale mill prices. Send carpenter's list for freight prepaid estimate.

KEYSTONE LUMBER COMPANY

Tacoma

Washington

WANTED to hear from owner of good farm for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

BARGAIN

One 28-inch Minneapolis Separator with self-feeder and wind stacker, and one gasoline tractor at a sacrifice. Both in good condition.

SAM PETERSON & SONS CO.,

147 S. State St., Salt Lake City, Utah.

treme conditions does not make for the best results.

In spring plowing we should avoid both of the above mentioned conditions. If it is left until the ground is dry and hot we have lost the greater part of the moisture needed for the life of the plants, besides giving the elements little chance to make for fertility. Some farmers argue that much good comes to the soil by turning under the crop volunteer and the weeds. It is true that a green crop will benefit the land if plowed under when the soil is sufficiently moist to aid a rapid decay, but generally it does not compensate, in the next crop at least, for the excessive loss of moisture from such a growth, and surely will never pay if let go until the moisture is almost exhausted. Never delay plowing until the summer months when the ground is dry and hot.

If plowing is done early, when ground is very wet and cold it also lessens its productivity. Stubborn conditions confront the plowman and the soil will lie heavy and practically inactive. Under these conditions, a person in sympathy with his work will intuitively feel a chill and dullness—a lack of affinity.

What time shall I plow my ground? This question is often asked and no one can in advance tell the exact day to get best results. The question would be better put by substituting "condition" for "time" in this operation as in all other operations on the farm. It is not the "time" we do our work, it is the "condition" under which it is done.

So answering the question proper, it will serve best to plow the land when it is warm, such as the first day of spring after the rainy season, and while there is a good amount of moisture—just enough to give the soil good life and yet be friable—at a season or condition when the combination of moisture and warmth appeals to our sympathies the keenest and we feel a strong affinity with mother earth. This then, is the condition that will give best results in spring plowing because it makes for a proper mixture of the elements to liberate the plant food in the soil, so the water can absorb it and hold it in readiness for the plant when needed. Operating under this condition gives life to the soil and gives the water greater power to do duty to the plants. This is the reason spring plowing is more efficient than fall plowing.

We lose a trifle in moisture by spring plowing but gain in fertility a little more than enough to compensate for the lost moisture. But to obtain this result and make it more efficient than fall plowing it must be done under the ideal conditions, otherwise the fall plowing will serve us better. This ideal condition may last only a few days, and may be prolonged for a month or two if double-disking of the

Duroc Jersey Boars

Boars chuck full of Grand Champion Breeding. Bred the same way as our Utah State Fair Winners. We have a great lot of top spring Boars and are offering them at bargain prices. Every Boar guaranteed to please or money refunded. Write us today.

RICHARDS LIVE STOCK CO.
Virginia Idaho
The West's Best Durocs.

stubble is done early in the season.

Let us give this our careful study and do our spring plowing when conditions are just right. Harrow each days plowing before the day closes.

SQUASH

Summer squashes are to many an attractive addition to the garden. Their culture is easy. Two or three hills will furnish enough for an average-sized family.

These squashes are not fastidious as to soils, though they, like most garden plants, prefer a warm, sandy loam. The most important requirements for success are abundance of manure and good cultivation. The hills may be spaced five or six feet apart. The plants will occupy the ground all summer if the fruits are harvested at useable stage.

In preparing a "hill" for the planting of summer squashes, a hole 2½ feet square and 12 inches deep should be dug; a bushel basketful of manure should then be thoroughly mixed with the excavated soil, which is then replaced in the hole. It is better to use well-rotted manure, but if the mixing with soil is properly done there will be little danger of heating from fresh straw manure. With chicken manure, use only one-half of this quantity.

This preparation can very well be done as soon as the ground is in condition for working in spring.

Squashes are tender plants, and cannot endure the slightest frost, so seed should not be planted until the soil is well warmed. Ten or a dozen seeds are planted usually in each hill. These should finally be thinned to one or two plants. The soil must be stirred by shallow cultivation until the plants cover the soil.

There are in use in this country several types of these squashes. They must all be used while very immature; if the thumb nail does not very readily puncture the skin of the fruit, it is past its best stage.

Scollop or pattypan squashes occur in white and yellow colors. Yellow summer crookneck is also much planted and is a good variety. These have short vines and are usually called bush forms. English forms of summer squashes are called vegetable marrows, and can be obtained from many American seedsmen. There is also an Italian summer squash under the name of Cocozelle, which is offered by a few seedsmen. These last have long vines, and should be given as much as eight or ten feet between hills.

Winter squashes such as Hubbard, Green and Yellow, Delicious and Boston Marrow require the cultural treatment given above, but should be given ten to twelve feet distance between hills. Winter squashes should be stored in a dry place where the temperature does not go below 45 degrees or 50 degrees F. An upstairs room is much better for this purpose than a cellar. The fruits must be thoroughly ripened, but not frosted.

PASTURIZING ALFALFA WITH HOGS

(Continued From Page Five)

were taken off July 14, and on the same date eight pure-bred Duroc-Jersey shoats were placed on the plat. These shoats, having a total initial weight of 302 pounds, remained on the pasture until September 22.

During the two periods 619 pounds of pork were produced. The corn consumed during the season amounted to 1,949 pounds. Estimating the value of the pork at 7 cents per pound gives a total return from the plat of \$43.33. The value of the corn fed, estimated as worth \$1.25 per 100 pounds, was \$24.36. This leaves a net return from the alfalfa crop of \$18.97 for the plat, which is at the rate of \$75.88 per acre, as compared with a net return of \$76.88 from a similar experiment conducted in 1914.

These results and also those secured in 1913 and 1914 indicate that the possibilities of pasturing alfalfa with hogs should receive careful consideration by the farmers.

Hogging Corn.

Four of the pigs used in the alfalfa-pasturing experiment were transferred to the corn plat on October 1, 1915. At this time the corn was practically all matured. Twenty-five days were required for the hogs to harvest the corn. During this time the hogs gained 216 pounds, or an average daily gain of 2.16 pounds per hog. The yield of the quarter-acre plat was estimated to be 13.10 bushels, or 52.41 bushels per acre. Valuing pork at 7 cents per pound, the hogs returned \$15.12 per one-quarter acre, or \$1.15 per bushel for the corn consumed. In other words, the hogs consumed 3.4 pounds of corn for each pound of gain. In the similar experiment conducted in 1914, hogs consumed 3.35 pounds of corn for each pound of gain.

THUMP—ITS TREATMENT

R. W. Hoggan, State Live Stock Inspector.

There has been a great loss of small pigs in some of the counties of this State due to Thumps or Palpitation. About sixty per cent of this spring's pigs have died from this cause. At the present time, when the conservation of our food-producing animals is a very important matter, it is essential that we all do our little bit in the conservation of our live stock.

I have outlined the symptoms, and treatment of this condition that will assist you in the saving of your animals.

Symptoms and Treatment

If due to increased effort with decreased power of the heart, give stimulants, alcohol or digitalis. Dose according to size. If palpitation of the heart is so great that it causes the whole body to shake, pulse irregular and rapid, give the following:

Camphor Tritae 3 drachms
Sodii Bromidi 1 drachm

Mix and divide into three powders; give one powder, and repeat in one hour if necessary.

If Thumps are due to indigestion and the animal lies around breathing fast, its sides expanding and contracting so fast as to shake the whole body, give one of the above powders and a purgative consisting of the following:

Epsom salts, one-third part;
Simple syrup, two-third parts; does according to size.

Mix and give by mouth.

Preventative treatment will assist greatly in overcoming this condition.

Preventative Treatment.

Do not feed an excess of grain or milk to the mother pig soon after farrowing. Cut down on all concentrated foods. Give plenty of green alfalfa and weeds; give plenty of exercise, but not sudden or exciting. Let the sow and her litter wander about as she pleases.

In the feeding of concentrated foods,

it makes the milk from the sow very rich. The digestive tract of the small pigs is unable to digest it, thus producing acute indigestion, resulting in Thumps. Congestion of the lungs and Dyspnea, causing the loss of pigs and profit, and another boost to the high cost of living.

PRACTICAL FARM CO-OPERATION

This is admittedly an age of improved machinery and advanced methods in farming. No longer is it possible for the man who farms by the old methods and with the old tools of our fathers to compete with his more progressive neighbor. If he undertakes it he is sure to go down in defeat.

But right at this point the advocate methods and improved machinery is met with a staggering proposition. Thousands of small farmers tell him point blank that they can not afford the great outlay of money necessary to stock their farms with the latest labor saving implements.

And it is the truth. They can't afford it. It would bankrupt them to undertake it.

What, then, is the answer?

One word—Co-operation! Co-operation in buying and using the more expensive implements.

Consider the number of days in the year you would use a wheat drill, or a disc plow or harrow, or a binder or a mower, or any of a large number of implements that are absolutely essential to successful farming today. The United States Department of Agriculture has figured this out, and the result is calculated to make one think twice—and then again. The department estimates that on the average small or medium sized farm the following implements are used annually the following number of days and fractions thereof:

Walking plow, 19.2; sulky plow, 14.7; spring tooth harrow, 6.6; spike tooth harrow, 3.1; disc harrow, 4.2; grain drill, 4.6; land roller, 4.7; corn

planter (1 row), 1.9; corn planter (2 row) 3, corn cultivator (1 row), 4.1; corn cultivator (2 row), 5.6; mower, 3.1; hay rake, 2.6; grain binder, 3.4.

It will easily be seen that unless a man is so well-to-do that he could afford to have capital tied up and lying idle, the plea of the small farmer that he can not afford the modern tools is the sober truth.

But there is a remedy in co-operative ownership. In fact, the plan is in operation in many sections of the country and is found to work admirably.

A glance at the list will convince anyone that there is not an implement there that could not be shared between two or three farmers, and many could be made to do service for five or six—some, even, or a much larger number.

What, then, is the necessity for each one burdening himself with a heavy outlay to provide all the needed tools when the burden can just as well be distributed among a number with the same satisfactory results?

Aren't there a number of farmers in this county who could profit by this plan?

If you do not want a partnership ownership, fearing possible disputes and resultant ill feelings, let one buy a corn planter, another a drill, and so on down the list. Then lend back and forth, and you get the same results. But make it co-operative, decide in advance just what tool each is to buy, and get everything that will reduce your expense and increase your yield.

One or two or three hundred dollars saved on equipment could be well invested in live stock and other crying necessities on many farms.

It is safe to say that no other class of people in the country carry as much "dead" capital as do the farmers—the very class who can least afford it.

The logical way to release this capital and put it to work is through co-operation.—Logan Journal.

Excursions East

via



Sale Dates

May 12, 16, 19, 23, 26, 30;
June 2, 6, 9, 13, 16, 20, 23, 27, 30;
July 4, 11, 18, 25;
August 1, 8, 15, 22, 29;
September 5 and 12, 1917.

Following round trip fares from Salt Lake City or Ogden:

Denver or Colo. Springs.....	\$27.50
Omaha or Kansas City.....	40.00
Chicago.....	59.00
St. Louis.....	51.20
St. Paul and Minneapolis.....	56.44
Memphis.....	60.00

Four high class through trains daily providing the usual,

"Up-To-The-Minute Union Pacific System Service"

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Salt Lake City, Utah.

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH

VOLUME XII, NO. 44

JUNE 9, 1917

Market Your Hay and Grain In This Way---Be Sure They Are Top Notchers When Marketed



Livestock is one of the most important branches of farming. We should raise more of them. Hogs bring the quickest returns. Sheep are profitable and a small number should be kept on every farm. Feeding a few steers for market, in this way selling this hay and grain, has helped many an Eastern farmer to have a bank account. Livestock helps to keep up the fertility of the soil. We ought to have more livestock on our farms.

A PATRIOTIC DUTY---BUY A LIBERTY BOND

POULTRY

REARING OF CHICKS

By Albert Jones.

It is important that finely chopped litter be placed on the floor or the brooding house as well as a liberal supply under the hover to protect the chicks from the cold floor. The brooder should be started long enough before the chicks are to be placed in it to warm and dry out the hover and litter and to enable the operator to become sufficiently familiar with its operation to regulate the temperature properly. The temperature should be from 95 degrees to 100 degrees for the first week and then gradually decreased as the chicks grow older and the season advances. It is impossible to say how fast to lower the temperature except to notice the chicks. At night, if the temperature is correct, the chicks will be spread out asleep on the floor under the hover. If it is too cold they will be crowding together and chirping.

Whenever caring for the chicks, the operator should look under the hover to find and remove any dead chicks or any which may be sick. All dead chicks should be burned or buried deeply and the sick or weak ones should either be killed or taken away from the others. Should they recover they should be marked and never used as breeders. As soon as the sex may be distinguished, mark the weak pullets and the strong, vigorous cockerels. Send the weak pullets to market and use only the strong cockerels for breeders. It is easier to judge the strength and vigor of chicks when compared only with those of the same age than when a number of ages are together.

Thoroughly clean the brooder and brooder house and disinfect them each time before chicks are placed in them. If a disease is known to have been present the brooder and house should be thoroughly scrubbed and allowed to dry before being disinfected. A strong mixture of almost any of the coal tar dips is satisfactory for disinfection, or a home-made disinfectant may be made as follows:

Shave one 10-cent cake of laundry soap into one pint of soft water. Heat or allow to stand until soap paste is formed. Stir in one pint of commercial cresol and heat or allow to stand until the soap paste is dissolved. Stir in one gallon of kerosene. This may be used diluted with ten to fifty gallons of water.

A considerable amount of labor and trouble may be saved by hatching at one time as large a proportion of the chicks as it is intended to raise as is practical. Almost always more chicks may be brooded by a hen than she will hatch at one time; thus some of the hens that were used for incubating may be reset or returned to the laying flock. Chicks of different ages must be kept separate if best results are to be attained.

When chicks are brooded with hens, small coops are desirable. Almost any of the small coops seen on farms are very satisfactory for confining the hen when the chicks are to be allowed their liberty. A good coop for hens may be made by covering a framework made of strips or waste lumber with a good grade of roofing paper. It is often necessary to keep the chicks confined during rainy weather or in the morning when the grass is wet. For this purpose a coop with a pen similar to the one shown is very satisfactory.

When the chicks are running at large the pen may be set on blocks or bricks and be used to feed the small chicks and exclude the larger ones.

Every food used in a ration for chicks should be clean and wholesome. The feeding of musty grains or tainted meat feeds results in serious bowel troubles. Tainted feeds may be detected more readily by holding them tightly in the hand for a short time until they become warm. If a putrid or decayed odor is found in meat feeds

they should not be used; however, a cooked or burned meat odor is present in a good grade of this product.

The cost of the ration is important in all animal feeding. It is, however, least important in chicken feeding, for only a small amount of food is required to bring chicks through the brooding period.

While the chick is developing in the egg only about one-fourth of the yolk is used; the remaining three-fourths is taken into the abdomen of the chick just before it hatches. This is sufficient material to maintain the life of the chick for a number of days. It is thought that too early feeding is often the cause of a failure of the chick to properly absorb this material and a consequent derangement of the digestive system. Dr. F. P. Shaw, who has made an extensive investigation of this subject, says that the digestive functions of the stomach (of the chick) are developed by the second day after hatching, whereas the pancreatic ferments are improperly developed before the seventh. The finding of Dr. Shaw explains the common practice of not giving chicks feed until two days old and then only giving them limited amounts of easily digested foods for the first week.

Sanitary Precautions

Throughout the entire brooding period the feed and water dishes should be kept clean and scalded often to prevent disease. For this same reason the litter in the pens should never be allowed to become filthy, but should be removed often.

SWAT THE ROOSTER

By Pren Moore.

Investigation in such states as Illinois and Missouri has revealed to the people the cause for so much loss in eggs during the hot months. It was found in Illinois and Missouri that the annual loss from spoiled eggs in each state was \$5,000,000, and that the males were responsible for this loss.

Excess of males is a waste in any flock. Males eat as do the hens, the only difference being, that the males consume more food than do the females and produce nothing. The only purpose for which males are valuable in any flock is to fertilize what eggs are needed for hatching. When the hatching season is over, the male becomes not only useless, but a real damage if allowed to run with the hens.

An infertile egg will keep for weeks and months under conditions that will spoil a fertile egg in a very few hours. Eggs will start incubation at a temperature of about 70 degrees Fahrenheit. This is not sufficient temperature for incubation, but it has the effect of starting decomposition.

Storage of eggs is an absolute necessity. There are not enough eggs produced in America to supply the demand if the product were equally distributed throughout the year. There is a season of over-production and a season of under-production. The over-production must be stored to take care of the shortage during the season of light production.

It should be remembered that eggs do not improve in storage. If good eggs are stored by proper methods they will keep indefinitely, but if in a state of decomposition when stored it may reasonably be expected that they will be in a worse condition when taken out of storage than when put in.

"Swat the Rooster"

Swat the rooster should be the slogan for every farmer and poultryman. Sell the surplus males. Those that are wanted for breeding purposes should be kept in pens to themselves except at the time they are needed for breeding purposes. It is not a good practice to mate the entire flock. The average farmer does not care to hatch more than 300 or 400 chicks each year. Twenty hens are enough

for this purpose. They should be the very best on the farm, mated with two good males in two separate pens. The hens should be turned out with the general flock as soon as the breeding season is over. Farmers will make progress in breeding in this manner as well as in producing better eggs.

May 15 is the latest date that males should be running with the hens. Last year Missouri observed May 10 as rooster day. Farmers are urged to market all surplus males on that day each year. This practice is saving millions of dollars for the farmers in Missouri.

Farmers, store your own eggs. Eggs are high and are going to continue to be high. Eggs are selling now in Chicago at midwinter prices. The 30c eggs that you store now will bring you a neat profit. Do not sell them to the commission men.

PREN MOORE.

COST OF RAISING LEGHORN PULLETS

For the last four years, the Pennsylvania experiment station has been collecting data on the cost of raising Leghorn pullets. In this experimental work, thousands of chicks have been hatched, and every item of expense in connection with raising them has been kept. The results of the experiment are summarized in a recent bulletin as follows:

1. Based on four seasons' work and several thousand chicks hatched, it required 1.83 eggs set for every Leghorn chick hatched.

2. The cost of hatching these eggs as 2.1 cents per chick, which, when added to the cost of eggs, increased the total cost of a chick when hatched to 5.7 cents.

3. Based on the first 12 weeks of life, it took 5.69 pounds of grain and mash, and 5.07 pounds of milk, costing 14.34 cents, to feed a Legorn chick.

4. During the same time, it took 3.59 pounds of grain and mash and 3.41 pounds of milk, costing 8.4 cents, to produce one pound of gain.

5. When figuring cost of feed, fuel, labor and litter, the whole cost of one pound of gain was 15.4 cents.

6. The average Leghorn pullet, 24 weeks old and ready to lay, weighed 2.75 pounds.

7. The feed was by far the most expensive item in the cost of rearing chicks.

8. On the basis of a hundred chicks hatched and a 17 per cent mortality, the per cent of pullets was 40.1 and the per cent of cockerels 42.9 per cent.

9. The time of hatching greatly influenced the rate of growth of the chicks, the price of broilers, the net cost of growing, and the weight of pullets at laying age. Early hatching paid best.

10. Early cockerels were sold at a profit. May hatched broilers sold at a loss.

11. The gross average cost of a pullet was 43.4 cents. This less profits in cockerels, made the net cost 8.1 cents.

12. Mortality varied and influenced the final cost. The average mortality of 999 chicks was 17 per cent.

13. For every pullet reared, it required the setting of 4.57 eggs.

14. Cockerels grow more rapidly than pullets.

MAN MUST HAVE PROPER REST TO DO BEST WORK

Experiments Show That Brief Periods of Rest at Short Intervals Make Higher Production Possible.

Fatigue is the decreased ability to do work as the result of doing work. Work uses up the energy stored in the cells, wears out the cells themselves, and produces poisons in the blood. Fatigue may be either physical or mental. Its characteristics are acceleration of the pulse and respiration, increase in bodily temperature, fluctuation of the attention, increase in error, decrease in control of movements, reduction in the capacity for physical work, and the lowering of the mental functions.



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During rest the body recovers from fatigue, the cells are rebuilt, and the blood gets rid of its poisons. The man who does work, mental or physical, must proportion his work and rest to accomplish the maximum amount of fatigue. If he works too long at a time he so completely exhausts the cells that they recover slowly. If he rests too frequently or too long at a time, he fails to accomplish his maximum amount of work. The periods for work and rest vary with the different kinds of work.

At the Bethlehem Steel Works it was found that undirected laborers loaded on an average of twelve and a half tons of pig iron per day. Even when bonuses were offered they were not able to go beyond this average, for if they did too much the first part of the day they were not able to do so much the latter part. When, under the direction of an efficiency expert, they followed each twelve-minute period of work with a period of rest, they were able to load forty-seven and a half tons with less fatigue. These and other experiments have led to the conclusion that every worker should have a brief period of rest every two hours at least, and much oftener if the work is difficult and exacting.—Alfred Westfall, Colorado A. C.

THE MAN WHO WINS

The man who wins is an average man, not built on any particular plan. Nor blest with any peculiar luck—just steady and earnest and full of pluck. When asked a question he does not "guess"—he knows and answers "No" or "Yes." When set a task that the rest can't do, he buckles down till he's put it through. Three things he's learned: That the man who tries finds favor in his employer's eyes; that it pays to know more than one thing well; that it doesn't pay all he knows to tell. For the man who wins is the man who works, who neither labor nor trouble shirks; who uses his hand, his head, his eyes. The man who wins is the man who tries.—Minneapolis Tribune.

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VOLUME XII.

LEHI, UTAH, SATURDAY, JUNE 9, 1917

No. 44

Farm Yard Manure

By William Olsen.

What is the real value of a ton of farm yard manure? How much greater returns can one get by using farm yard manure? If we could answer these two questions we might be more careful in the use of our farm yard manure.

The fact that the application of farm yard manure has resulted in a decided increase in yield in so many instances where tried has proved beyond a doubt its value as a fertilizer.

It is hardly necessary to cite figures showing the increased yields which it has produced, since so many results have been published that they are more or less familiar to those who read any of the agricultural publications. Charles E. Thorne, director of the Ohio agricultural experiment station, is authority for the statement that in England the yield of wheat has increased from 12 bushels per acre to somewhat over 25 bushels per acre during the past 200 years, due alone to the use of farm yard manure. Specific instances might be cited where individuals or experiment stations had realized larger returns from the use of manure than from any other fertilizer used.

The manure as applied to the land will, in large measure, be valued according to the nature and amount of litter used. Different materials used for this purpose have different fertilizing values, but it has been found that wheat straw is probably the best material to use for that purpose in this state, due to its relative abundance and comparatively high fertilizing value. The litter used should be a good absorbent and used in generous amounts to preserve the liquid part of the manure, which is the most valuable.

After the manure has been produced the next problem is to preserve it and prevent unnecessary losses of valuable elements due to leaching and fermentation processes. Ordinary farm manure is worth about \$2.25 per ton for its fertilizing materials alone.

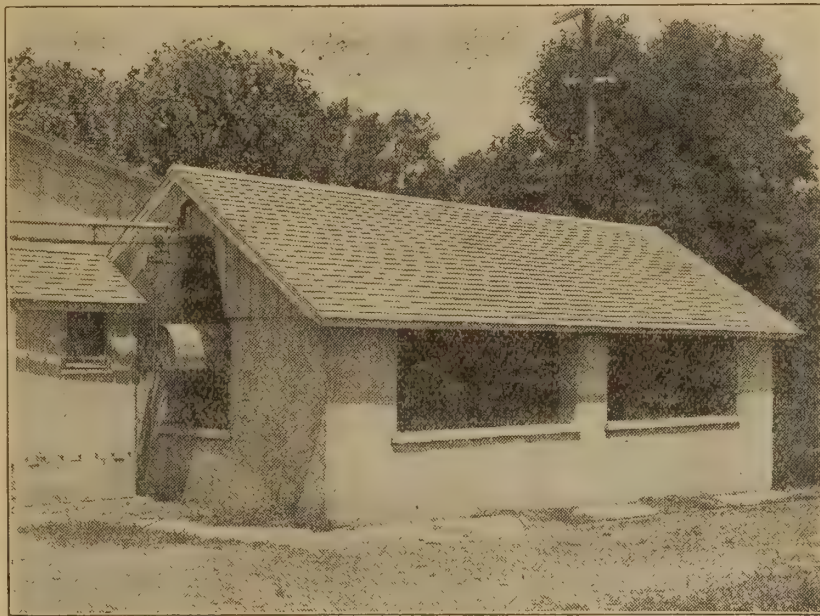
The first thing to consider in the preservation of manure is to prevent the loss of the liquid portion. Nitrogen is the most important fertilizing element found in manure and of the total amount contained in manure between 60 per cent and 70 per cent is found in the liquid portion. This loss can in large measure be reduced by placing cement floors in the stalls and using a generous supply of some good absorbent for bedding, preferably wheat straw. The least loss occurs in manure when it is hauled direct from the stable and applied to the land. It is not always possible to do this, however, due to climatic conditions and the rush of work at certain seasons of the year, and at such times some other means must be employed to prevent losses. Probably as good a method as any is to provide a shallow pit with a cheap roof over it to keep out rains and with the bottom and sides cemented to prevent losses by seepage. If the roof is placed at a considerable distance above the top of the pit no difficulty will be encountered in filling it with manure and, too, the manure can readily be thrown out again when it is put upon the land. Other means of preserving the manure may be

more desirable on some farms, and if such be the case those methods should be adopted.

The principal ways in which the value of farm manure is lost are:

Drainage, leaching, heating and fermenting.

By drainage is meant the runoff from stables, manure sheds and cellars. It is very common indeed to find farm barnyards which have a drainage ditch to carry off half the value of the manure pile. The barn-



Covered manure pit with litter carrier connecting it with the barn. It is desirable to screen in the pit to prevent the manure pile from becoming a breeding place for flies or other disease-carrying insects.



Manure pits conveniently located so that stable and yard refuse may be thrown directly into them.

yard, of course, is not the place to store the liquid manure, but instead of digging a ditch the farmer ought to begin at the source of trouble and prevent drainage by making the cellar or shed tight and by using more bedding. This drainage from stables and manure piles always means a serious loss of potash and nitrogen, as it is the liquid portion which runs off. It may be compared to a leak in the milk pail. In fact, the total loss may be greater. Can you afford it?

More Oatmeal In The Diet

One way to reduce the cost of food for the family is to use more cornmeal, where this is low in price as compared with other cereals. Cornmeal at present prices, when bought at retail stores, costs about half as much per pound as wheat flour, one-third as much as rolled oats, one-fourth as much as rolled wheat and about half as much as broken rice. That is, it costs much less per pound than any of the other popular cereal foods, yet even the bolted cornmeal usually sold, from which the germ of

the grain has been removed to make the meal keep longer, has a food value which compares favorably with that of wheat flour. It does not supply quite so much protein or mineral matter for building the tissues of the body, but, on the other hand, it gives more fat and starch, pound for pound, and its value as fuel for the body is fully as high.

The old-fashioned unbolted cornmeal, made from the whole grain, which can often be obtained by the farmer who will take his grain to mill, and can often be purchased in shops and markets, contains more of the tissue-building material and has what many consider even a better flavor than the bolted meal, and is much liked for making some forms of cornbread.

Any family, in town or country, can have the best of cornmeal by grinding it at home in a hand grist mill. The city man can buy corn by the bushel at a grain store. He can grind it coarse or fine, to suit the taste of the family, and in quantities to last a day or a week, or longer. Most people will agree that this meal containing the germ is very palatable and compares well in this respect with that ordinarily purchased ready ground. Prices of hand mills of substantial make run from \$2.50 to \$5. A small mill can be had for as little as \$1.50, though this probably would prove too tedious to use, except for small quantities.

Whether obtained at the retail store, brought from a mill, or ground at home, cornmeal can be used in several ways to give inexpensive variety to the diet.

A dish of mush and milk has made the greater part of many a supper on the farm, and children thrive on it, though they may rebel at cleaning the kettle and the "pudding spoon" afterward, if the old-time methods of cooking it are followed. It is a simple dish to make—just $3\frac{1}{2}$ cups of water and a teaspoon of salt to every cup of meal. The water can be put in cold and the vessel heated gradually. A double boiler is very convenient in cooking cornmeal mush, as well as all other cereals, and is easier to clean. The great secret of good mush is long slow cooking—the longer the better. A fireless cooker, in which the cooking can go on all day or all night, is very useful for this purpose.

For "quick action" in getting breakfast in the city flat, the cornmeal and salt may be put in the double boiler, mixed with a little cold water, and then hot water may be added up to the required amount. If clean hot water is to be had from the spigot, a good cornmeal mush can be made in three-quarters of an hour. But cornmeal can hardly be cooked properly in less time.

Cornmeal mush can be used in many other ways besides as a breakfast or supper dish. Fried mush, mush with fruit and mush with cheese, are in the list of recipes. Fish cakes with cornmeal are good and cornmeal and meat of different kinds may be cooked together, "scrapple" being a favorite in some parts of the country.

Cornbread and corn griddle cakes are made in many ways, all good. Bread may be made of wheat flour and cornmeal, half-and-half. Puddings and even doughnuts and cakes are made with cornmeal as the basis.

(Continued on Page 11)

DAIRYING

TREATING AFFECTED TEATS

By W. H. Underwood.

When a cow fails to yield her milk in a proper manner, gives bloody milk etc., the trouble can often be found in some disorder of the teats. In fact, it would be hard to find a dairy herd in which at least one member of the herd is not more or less affected with either leaky teats, blocked teats, sore teats or warts on the teats.

Leaking from the teats may occur when a cow is milking heavily and the periods between milking are not evenly divided, or it may be because the sphincter muscle is not properly performing its duties. As there is no remedy for this trouble, about the only thing that can be done, in case conditions warrant, is to place a rubber band around the lower part of the teat.

Warts on the teats do not, as a general thing, cause much trouble at first, but after they are well developed they tend to make the teat tender to handle, besides adding to the danger of increasing the possibility of contaminating the milk through infectious material which may be found upon them. The best way I know of to get rid of warts is to tie a piece of waxed silk tightly around the wart as close to the teat as possible. After a few days the wart will drop off and cause no more trouble. For the warts that are too small to tie around with silk, an easy way of removing them is to touch them with a feather dipped in butter of antimony. This is very strong and care should be taken not to touch the teat at all with it. Olive oil is also good in removing warts. They are smeared thickly with the pure oil, several applications usually being necessary. The best time to get rid of warts is when the cow is dry.

Sore teats are a difficult proposition as milking opens the sores, and we can't allow a cow in full milk flow to lay off for a week or so to enable

her teats to heal up. Many cases of sore teats are caused by leaving the teats wet after milking and when the cows are turned out into the lot or pasture the wind chaps and cuts the teats. The teats should, by all means, be thoroughly dried after milking is completed.

Here is a way of treating sore teats that I have tried and found very successful. To one ounce of glycerine add one dram of boracic acid. Mix this in one-half pint of warm water and put in a narrow jam jar. After milking put the teat in this mixture, holding the jar close up to the cow's udder, and let the affected teat soak there for a few minutes. This mixture may be kept and used again and again. A little touch with a crystal of alum after this bath will help the more obstinate sores to heal, but care must be exercised not to apply anything that will cause the skin of the teat to wrinkle and pucker up when the sores heal. Oxide of zinc ointment applied after each milking is also a good remedy for sore teats.

Blocked teats are always a bother as they interfere with the flow of the milk, and moreover make it very hard to strip the quarter clean. They are caused by a little ball of flesh inside. In nature these growths are very much like the warts on the outside of the teats. Some are only attached to the lining of the skin by a little string and can be pushed out of the way by the insertion of a teat syphon. Sometimes they break off and come away of their own accord. I have seen the more obstinate ones removed by the use of a large sized milk syphon with one side filed to a sharp edge in exactly the same manner as an apple is cored with a patent corer.

The syphon is held in the right hand and the teat held extended in the left. After the syphon is introduced into the teat it is slowly turned around with the sharp edge against the lump. It is a simple little operation and yet it is easy to lose the quarter in performing it. The syphon must be sterilized in boiling water before being inserted and every precaution should be taken to insure absolute cleanliness. There will be a little blood come from the teat and this should be milked out and the teat syringed out with a 7 per cent mixture of boracic acid and warm water. The lining of the teat will soon heal so long as it is kept free from germs. This can only be done by keeping everything spotlessly clean. No one but a competent operator should attempt to cut away these lumps in teats, otherwise more harm is apt to result than good accomplished.

HIGH FEED COST SHOULD ELIMINATE POOR COWS

By Prof. C. H. Staples.

The high cost of feed for dairy cows has been alarming to the dairymen all over the country for the last few months, and many say they can not buy feed at present prices and sell milk for what the consumer and dealers want to pay. We wonder how many of these same dairymen are keeping records of the milk and butterfat produced by their cows, and the feed they consume?

The time is here when the dairyman must know what each cow in his herd is doing, and whether or not she is paying for the feed and labor that is required to keep her. There is only one way to know which cows are making a profit for the dairyman, and that is to weigh the milk and make a fat test of it once each month; keep an account of the feed consumed and strike a balance at the end of the month; then keep the cow that makes money for the owner, feed well and send the others to the butcher.

A recent circular sent out from the University of Wisconsin, which state

is a leader for profitable dairy farming, makes the following statements: "Officials in charge of the cow testing associations report unusually large fatalities among the ranks of the low-producing herd members. Competition," they say, "may be the life of trade, but it is the death of the unprofitable cow. High cost of feed and labor are driving her to the block. If some cows were human and could see the high feed and labor costs and their small returns, they would be tempted to commit suicide."

"In the herds owned by the members of these associations, the verdict of 'guilty' is rendered by three judges—the milk scale, the Babcock test and the feed record; and the death sentence is pronounced by the tester. From eleven of the associations 144 cows have been sentenced to the stockyards during the past month, the high price of beef being an additional argument against them."

If the dairymen of Wisconsin have learned that they must keep records of their herds in order to make dairying profitable, then all dairymen should certainly consider this evidence sufficient and final, and start the record work at once.

We look to Wisconsin, at least many of us, for good dairy cows, a large number of profitable cows having been imported from there into this state during the year, and these same cows have been bred by dairymen who keep records, and eliminate the unprofitable ones. Wisconsin has thousands of dairy cows on test, and the owners know no other way to improve their herds than keeping records, using good bulls from high producing dams, feeding the good cows well, raising the heifer calves from the best cows, and sending the "scrub" to the butcher.

Dairymen must start the record work if they are going to stay in the business and make money, and all dairymen know that their work is too hard and laborious to keep cows for pleasure.



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NEW DE LAVAL CREAM SEPARATOR

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Likewise the saving of time that is possible through a cream separator of ample capacity, that is easily turned and always in order.

There was never a summer in the history of the country when both these considerations were of as great importance to the nation as well as to the individual producer of cream and butter.

Under present circumstances, a modern De Laval Cream Separator will save its cost every few weeks. Every cow owner owes it to himself and his fellow countrymen to effect this saving.

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Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for new catalog or any desired information.

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She makes use of every ounce of feed. Her milk is the richest of all the breeds in butter fat and solids. She is rugged and vigorous—will thrive in any climate. She milks steadily. She is beautiful and gentle. She's the mortgage lifter. She's the cow for the everyday farmer, yet she's the rich man's pride, too. And she's the cow for the family.

Our free book, "About Jersey Cattle," proves these things. Send for it now—a postal will do—it's interesting and instructive.

The American Jersey Cattle Club
387 West 23rd Street • New York City

There are a few dairymen in the state who are keeping records of their cows and nine out of ten of them are making money, or they certainly know the reason why. The labor and cost of keeping records of the dairy herd is one of the smallest items of expense attached to the dairy farm; and when once started it is found simple, easy and always interesting to the dairymen, and, most important of all, very profitable.

The dairy division of the United States Department of Agriculture furnishes free all record blanks and books necessary for herd record work, and the equipment needed for making the tests can be had for a small sum.

All people have equal luck, only some people let their luck leak. And the leak usually occurs by way of the mouth.—Joffe.

THE ADVANTAGE OF BULL ASSOCIATIONS

A co-operative bull association is a farmers' organization, the chief purpose of which is the joint ownership and use of high-class, pure-bred bulls. The association also may encourage careful selection of cows, obtain better prices for dairy products, introduce better methods of buying and selling cattle, work for improved sanitary conditions, intelligently fight contagious diseases of cattle, and in many other ways assist the dairy business.

The owners of small herds of grade cows often feel that they cannot afford to purchase valuable pure-bred bulls. In consequence they buy scrubs or breed their cows to a scrub bull or an inferior pure-bred bull on some near-by farm. One year a Holstein bull may be used, the next year a Jersey, and occasionally a bull of no particular breeding. The work of the co-operative bull associations makes it possible for any farmer to own a share in a pure-bred bull of high quality.

A bull association in its simplest form may consist of three farmers who together purchase three good registered bulls of the same breed. Each farmer keeps one of these bulls for two years, at the end of which time the bulls are exchanged to prevent inbreeding. For the same reason a second exchange is made at the end of four years. In this way, by paying the purchase price of only one bull, each member of the association has the use of good pure-bred bulls for six years. A larger membership in the association may either reduce expenses or make possible the purchase of better bulls.

The ideal association is composed of a much larger number of farmers. It jointly owns five bulls, divides its territory into five "breeding blocks," and assigns one bull to each block. As many as 50 or 60 cows may belong to the farmers in each block, and the bull is kept on some farm centrally located. The blocks are numbered from 1 to 5, and every two years the bulls are moved forward to the next block. If all the bulls live and are retained until each has made one complete circuit, no new bulls have to be purchased during a period of 10 years. As soon as the daughters freshen, evidence of the sire's true value begins to accumulate. This is the only true test of a bull's real value; but it is self-evident that this test cannot be applied until the bull approaches the age of 4 years. In ordinary farm practice bulls are usually disposed of before their true value can be known. The co-operative bull association makes it possible to obtain several years' service from bulls that trans-

mit desired qualities and to eliminate all others.

The original cost of the five bulls and their annual cost of maintenance are usually divided among the members of the association according to the number of cows owned by each. Records on file in the dairy division of the department show that the members of associations now organized are getting the services of these high-class pure-bred bulls at an average cost considerably less than they formerly paid for the services of scrub bulls or registered bulls of doubtful merit. Many farmers in Maryland, Michigan and Minnesota, when questioned regarding the value of co-operative bull associations, estimated that the use of sires belonging to the association increased the value of the offspring in the first generation from 30 to 80 per cent. The average of these estimates was 65 per cent.

The educational work of each association makes the members alert to prevent the introduction and spread of disease of any kind. The well-managed bull association requires that all cattle belonging to its members shall be tested for tuberculosis and takes every known precaution to prevent the introduction of contagious abortion.

It is greatly to the advantage of a co-operative association that it be incorporated under state laws. This facilitates the transaction of business, equitably distributes responsibility, and gives the organization greater prestige in the community.

Co-operative bull associations have been common in Denmark for many years, but the first associations of the kind in the United States were organized in 1908 by the Michigan Agricultural College. In this country their growth has not been rapid, but, as a rule they have been highly successful. If skillfully managed, they may be made a greater factor in the upbuilding of profitable dairying in this country.

BUILDING A DAIRY HERD

By Gordon H. Gooderham.

Right at the start of this little preaching, I would like to impress on the small breeder the value of testing, whether it be 7, 14, 30 days, or yearly. The small outlay for this work is absolutely nothing, when you consider the high prices one gets for officially tested cows. Take one instance in my own herd:

I once offered an old cow, "11 years old," for \$150 to a man who was buying for the west. Shortly after she calved, giving me a fine heifer. As we were doing some testing at the time we also started this old cow, and very much to my surprise she finished up by making 29½ pounds of butter and 565 pounds milk in 7 days; best day's milking was 90 pounds. I have since refused \$800 for her. This goes to prove the value of testing.

During the time I have been breeding Holsteins I have had many letters such as the one I have now before me. In this letter the writer says he has been offered \$150 more for a bull calf than he paid me for him, the dam having since been retested, but he will not sell as the animal suits him, as there is nothing so good as he in the whole neighborhood.

It is surprising the small attention the majority of farmers pay to the matter of breeding in their cattle.

The farmer of today is, in most cases, a keen business man, who conducts his farm on business principles. If he is buying a horse he will always pay more for one that is from good stock. Even if buying a dog it must be well bred. But in a large majority of cases a cow to the farmer is just a cow, and if it will have a calf and give milk it is all that is required.

There is no animal on the farm that returns so large a profit for blood and breeding as the cow. It costs no more to feed and look after a good animal than an ordinary one. And the yield of milk and butter from a cow from stock that has been bred

to produce in large quantities will be double the yield from an ordinary grade animal.

The initial cost, of course, is greater when buying, but apart from the extra profit sure to be derived from the increased return in milk, the farmer will get a calf from a well-bred cow, if she is bred to a good sire, that will sell for two or three times the original cost of the dam.

Apart from the financial benefits to be derived from having well-bred cattle is the pleasure and satisfaction one gets from having animals that can be shown to friends and neighbors as something out of the ordinary.

As has been many times asserted, I agree that the sire is the most important in producing good stock. If the calf is a heifer the owner naturally will not think of disposing of it, but if it is a bull calf in most cases it is sold. Now comes the importance of a sire of undoubted breeding and backing, as the price to be obtained for a bull calf from such a sire will be three or four times that from an ordinary sire.

To illustrate, if one had a bull calf from a dam with a 21-pound butter record in seven days, out of an inferior or ordinary sire, he would not get more than \$15 to \$25 for him, and very probably the calf would have to be sold for veal. A bull calf from the same dam, got by a sire with first-class backing, would readily sell for \$100.

Another important matter is that many breeders, especially beginners, when buying require only that the stock must be pure-bred. That is right so far as it goes, but they should go further and demand that the dam of the animal in question be a large producer, and the sire from a large producer, and the further back the producing strain goes the better, but it is essential that the immediate ancestors be producers.

In many advertisements one sees bull calves for sale related to some great dam or sire five or six generations back, but nothing said about the nearer ancestors. This kind are no good; it is the close ancestors that should be looked for every time.

As a breeder of Holsteins, I am naturally prejudiced in favor of that breed, but these remarks apply to any of the dairy breeds.

DRAG THE ROAD

When the smile of spring appears,
Drag the roads;
When the summer time is here,
Drag the roads;
When the corn is in the ear,
In the winter cold and drear,
Every season of the year,
Drag the roads.

When you've nothing else to do,
Drag the roads;
If but for an hour or two,
Drag the roads;
It will keep them good as new;
With a purpose firm and true
Fall in line; it's up to you—
Drag the roads.

BRAVERY

Woman—How did you get that Carnegie medal?
Tramp—Heroism, lady. I took it away from a guy that was twice my size.

25 Years of Grand Results

24 Little Ave.,
Buffalo, N. Y.
Mar. 7, 1911
Gentlemen: I have used
your Spavin Treatment
for twenty-five years
with excellent results.
T. M. Nolan.



**KENDALL'S
Spavin Treatment**
Known For 40 Years as
Kendall's Spavin Cure

Keeps legs sound and trim. It will add many dollars to the value of your horse. The old reliable remedy for Spavin, Ringbone, Splint, Curb, Swollen Joints and Lameness. Equally reliable as household remedy. At druggists, \$1 a bottle. Get free book, "A Treatise on the Horse," or write to—
DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

Save on a TRACTOR!

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Has everything you want and demand on a tractor and saves you money, because you buy direct from the manufacturer.
12 full H. P. on draw bar, 20 H. P. on belt, four-cylinder, water-cooled, long-stroke, modern motor. By actual test requires only 13.3 per cent of motor's power to propel itself, delivers at the draw bar 86.7 per cent of the motor's efficiency.
Falls easily three 14-in. bottoms 8 to 9 in. deep in clover or timothy sod. Unexcelled for road building. Will do any portable engine job.
FREE Book Write tonight for the book that tells all and explains my money-saving system.
Wm. Galloway, Pres.,
WM. GALLOWAY CO.
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Manufacturers constantly writing us for patents. List of inventions actually requested and book "How to Obtain a Patent" sent free. Send rough sketch for free report regarding patentability. Special assistance given our clients in securing patents. Write for details of interest to every inventor.
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Best Grade.....14c
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Good Grade Seed somewhat dark.....10c
Less than full sacks ½c lb. higher. All prices f. o. b. Oasis or Lynndale, Utah. These three grades all run high germination test.

Cash must accompany the order.

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Hinckley Utah

Genuine EDISON PHONOGRAPHS

RE-CREATE Music. Thos. A. Edison's great triumph. The world's master phonograph, latest model which is now offered to you at Edison's Own Price. On easy terms. A little each week or month soon makes it all yours. Free catalog of ALL styles mailed postpaid without obligation.
DAYNES-BEEBE MUSIC CO.
DEPT. E, SALT LAKE CITY, UTAH

1061

Big Money Running Water

Let us start you in a business that will make you from \$15 to \$50 a day when farm work is slack. Other men have done it for years with an

Improved Powers Combined Well Boring and Drilling Machine

Same rig bores through any soil at rate of 100 ft. in 10 hours, and drills through rock. One man hauls and operates machine. Engine power if wanted. Easy to operate—no experts needed. Small investment; easy terms. Make machine pay for itself in a few weeks work. There is a big demand for well and water stock, and for irrigation. Write for free illustrated circulars showing different styles.

Lisle Manufacturing Co.
Box 976 Clarinda, Iowa

GET MY PRICES

I can ship at once any size or style WITTE High-Grade Engine—2 to 22 H.P.—Kerosene or Gasoline—Stationary, Portable or Saw-Rig—ready to run—Guaranteed 5 years. You don't have to wait 6 to 8 weeks for a WITTE. You save \$25 to \$100. One of engines "How to Judge Engines" by return mail.—Ed. H. Witte, Pres.,
WITTE ENGINE WORKS,
Oakland Ave., Kansas City, Mo.
Empire Bldg., St. Louis, Mo.

Kill All Flies! THEY SPREAD DISEASE

Placed anywhere, **DAISY FLY KILLER** attracts and kills all flies. Neat, clean, ornamental, convenient, and cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Ask for

Daisy Fly Killer
Sold by dealers, or 6 sent by express, prepaid, \$1.00.

HAROLD SOMERS, 150 DeKalb Avenue, Brooklyn, N. Y.

CLEAN UP YOUR HARNESS

Don't let the leather get stiff and crack. You'll find that your harness will last much longer if you use

EUREKA Harness Oil

Preserves the leather and prevents checking. No acid, lamp black, or fat.

Sold in sealed tins containing from 1 pint to five gallons, and in barrels and half-barrels by reliable dealers everywhere.

THE CONTINENTAL OIL COMPANY
(A Colorado Corporation)
Denver Butte Pueblo Salt Lake City Cheyenne Albuquerque Boise



Combined with the
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Established 1904.

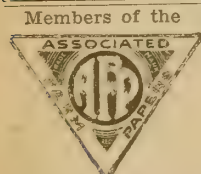
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Our office at Salt Lake City, Utah, is in the McIntyre
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Change in Address. When ordering a change in
the address, subscribers should be sure to give their
former as well as their present address, otherwise the
address cannot be changed. This is a matter of im-
portance to you and to us.

OFFICIAL ORGAN

Utah Horticultural Society, Utah State Dairymen's
Association, Utah State Bee Keepers' Association,
Bear River Valley Farmers' Protective and Commer-
cial Association, Agricultural College Extension De-
partment and Utah State Fair Association, Utah-
Idaho Millers' and Grain Dealers' Association, Utah
Fruit Growers' Association.

OUR GUARANTEE

We guarantee every subscriber against loss through
dishonesty or attempted swindle by any advertiser in
this publication. We do not attempt, however, to
adjust trifling differences between the subscribers and
honest responsible advertisers, nor will we pay the
debts of honest bankrupts. Notice of complaint must
be sent us within thirty days from date of the trans-
action, and the subscriber must have mentioned Utah
Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be
sent upon application.

Fight the pests, weeds or anything else that
will prevent a good crop this year.

Plant some corn now build your silo later.
Plenty of food for our live stock is important.

CALF CLUBS

The boys and those who are helping them are
to be complimented from the fact that about one
hundred high grade calves will be shipped into
Box Elder County within a very short time.

Calf clubs have been organized and the young
people will be given every assistance and en-
couragement in order to increase the live stock
industry of the country. The banks of the county
are helping to finance the work.

It would be a good thing if other communities
were to take up the same work.

"THE SMALL VEGETABLE GARDEN"

We have in our office a limited number of
Farmers' Bulletin 818, "The Small Vegetable Gar-
den," recently gotten out by the United States
Department of Agriculture.

We will be very pleased to send you one of
these bulletins, free of all charge, if you will just
ask for it. You will find it helpful and valuable
to you.

We received them through the courtesy of
Senator William H. King.

USE YOUR TRACTOR

Farm labor, and especially horse or motor
power, is very scarce. It is a duty one owes to
his country to help increase the farm products.

A man who owns a tractor should keep it in
use for the profit there is in working a machine
of this kind, and he should also do it in order to
help his neighbors.

Let your neighbor know you will do custom or
exchange work. There are thousands of acres
of land that should be plowed this summer and
seeded. Don't let an acre that might otherwise
be planted go untillied because your tractor is in
the shed. Help your neighbors do their plowing
and harrowing. In this way you can do your

part in helping to increase the food products, and
it should bring you a profit. Use your tractor—
do all the plowing, harrowing you can.

SELLING PURE-BRED CATTLE

Hardly a week passes but what we have some-
one inquiring where can he buy this or that kind
of pure-bred livestock.

We know there are many breeders who usually
have one or more animals for sale. We have in
mind one instance, where a pure-bred calf of ex-
cellent breeding, was sold for veal, because the
man did not know where to sell it, and did not
have time to raise it.

At the same time, others were wanting just
such an animal. Now the problem is, how can
the two get together—the buyer and the seller?

The best way possible is for the man who
has livestock to sell to do a little advertising—
let people know what you have to sell. You do
not have to use a large space unless you have
enough cattle to justify it. The man who is go-
ing to be in the pure-bred livestock business
must do some advertising of some kind.

GROW CORN FOR FOOD

We have made arrangements with an expert,
a man who has had a great deal of experience,
to give our readers a series of articles on corn,
telling how it can be used for human food.

Hundreds of boys are growing corn, and we
want to tell them how to use the corn for hu-
man food. We want them to say they have
helped feed the family. This will help the flour
supply.

An article in our paper this week tells some-
thing about why we should use more corn in the
diet. With this idea in view, that he is going
to help everyone who is growing corn to do his
very best. You cannot all win prizes, but you
can all help increase and conserve the food
supply.

Grow all the corn you can. It is not too late
now to plant the quick-growing varieties. Corn
is a good crop, and we should grow more of it.
Plant some sweet corn for summer use and dry-
ing for winter use.

REPAIRS

Have you looked over your mowers and other
haying tools? They may need a few repairs or
some extra parts. Order them today because you
cannot expect to get them on short notice, as we
have in the past. Implement dealers are short,
and orders of extras are very slow coming in
from the factory.

Spend a little time in going over the machines
and find out what you need and buy or order it
today.

It is not too far ahead to do this same thing
with harvesting machinery. You know what
a delay of a few hours, a day or two means when
harvest is on. Our implement dealers should
look ahead and stock up so as to help the farmer
in every way possible.

Look over your machinery and get all needed
repairs now.

WHAT A LITTLE MEANS.

The fact that we are at war does not seem to
come home to some people yet. The fact that
we have good prospects for a crop this year
seems to make the average man or woman think
the rest of the world might have the same chance.

An extra bushel of wheat, a few pounds more
sugar beets per acre, an increased number of
potatoes does not seem important but it is just
the same. Our efficiency to produce more per
acre is going to be a test every farmer should
measure up to.

Extra work, better care and cultivation, fight-
ing farm pests, may increase our production and
if every one will do this, think of what it would
mean to the total crop.

Every little is going to help, no matter what
you are growing. The careful attention to small

things is going to play an important part in win-
ning the war and harvesting a big crop.

If you believe in humanity, help by producing a
little more, for many a one is going to go hun-
gry. Maybe not here at home, but some place,
where conditions are not so favorable as we are
blessed with here.

A little means much this year. See that you
do your "bit" to help.

SAVING MONEY

One of the most important things a young man
or woman must learn, if he or she wants to suc-
ceed in life, is to save. Live within your means.
Spend just a little less than you make.

It does not mean you will have to be a miser.
It simply means if you save money you are able
to help yourself and be of some use to your fel-
low men.

Be selfish enough to save, and later on you
can afford to be unselfish enough to serve. A
man is not worth much to himself if he cannot
save a part of what he earns, and he will never
be worth much to anyone else unless he has some
money saved.

Some people spend their money before they
get it. Your income may be monthly or from
sale of farm products, it makes no difference, you
should learn to save a part of it, although it may
be small.

Start saving as early as you can. Start when
you are young and when you are older it will
come naturally. If you never start, you will
never save and if you never keep on after you start
you will never save. The starting and the keeping
on are the only things you have to watch. Start
now and see how soon you get the habit.

FIGHT THE WEEDS

The best time to fight the weeds is before they
come up out of the ground by good cultivation.

Weeds should not be allowed to get a start.
Keep them down. They rob the soil of its fer-
tility and steal the moisture that should be used
in maturing your crops. There are no good rea-
sons why weeds should be allowed to grow and
many why they should be destroyed.

Fight the weeds, for it means better and big-
ger crops. You can't raise a crop of weeds and
a crop of anything else on the same ground at
the same time.

We have many other pests, but none so trouble-
some, none so destructive as weeds. Other pests
come and go, but the weeds are like the "poor,"
always with us.

Fight the weeds early, before they get a start.
Cultivation to kill the weeds is helpful to the
soil, so it works both ways, improves the soil
and destroys that pest which prevents the nat-
ural growth of your crops.

PATRIOTS OF THE FARM

Much is being said these days about patriotism,
and we admire the man or boy who enlists and
goes to the front. There is another form of pa-
triotism this year for the older men, and that
is in producing foodstuff.

We must not avoid facts and, if we are to ac-
cept the statements of our national leaders, there
is a great food shortage in the world. The men
who fight, and the women and children of the old
world must be fed. The war would not last long
as the men at the front could not exist without
the active support of the farm patriots.

Every man who does not go to the front and
who is physically able, should be made to work.
We agree with Governor Bamberger's recent
statement that the idler should be put to work or
drafted into the army. Everyone must do his
part.

The men on the farms must bear an increased
burden this year. More is expected of them and
they will have less help with which to do this
service. Under present conditions the man who
furnishes the food will be doing as great a
service as the man who may furnish the am-
munition. So we suggest again that the farmer,
the producer, is a true patriot.

Beautifying of Home Grounds

By Emil Hansen, Floriculturist and Landscape Gardener, Utah Agricultural College.

Dahlias

Since 1787, when the dahlia was first discovered in Mexico by Baron Humboldt, it has improved steadily until at the present time we have several types of dahlias, all of which are very popular. The dahlia is known to be one of the easiest plants to grow. It will succeed in any ordinary soil in which potatoes, corn, etc., will grow. However, light soil moderately fertilized is preferable.

Dahlias do best if planted in the open free from shade of trees or buildings. The roots should be planted from three to four feet apart—or even more if space will permit. They should be planted deep enough so that when planted the roots are covered with six inches of soil on top of the crown. The best time for planting the roots in this section of country is during May.

Since it is necessary to use stakes for the support of dahlias during the summer, it is best to place these stakes in the ground immediately after planting. Such stakes should present a neat appearance, and if of a standard size and painted they will add much to the general appearance of the dahlia bed. When tying up the plants, do not crowd them since it is important that air and light penetrate freely. Throughout the season the soil around the plants should be cultivated and kept loose and under no circumstances should the surface become baked. It is very easy to over-water dahlias. They should never be watered unless dry, at which time they should be given a thorough watering, sufficient to penetrate the soil to a depth of at least a foot. No further water should be given until needed, when another thorough soaking should be applied.

Insects and Diseases

Dahlias are rather free from disease and insects although they are occasionally attacked by mildew. In this event, apply a spraying of Bordeaux mixture twice a week for two or three weeks. With such treatment the trouble generally disappears—if not too badly affected before beginning treatment. Green fly (aphis) will sometimes attack the plants on the underside of the foliage. A spraying with tobacco water or sprinkling the plant with a liberal amount of tobacco dust will destroy this insect. If cutworms attack the young shoots when coming up out of the ground, sprinkle with air-slacked lime. This is a very useful remedy.

Wintering the Roots

When frost has destroyed the foliage, the stems should be cut down close to the ground and the roots dug up. It is best to keep some soil with the roots and then put them in a place where they can dry slowly for a few days before storing them away. When thoroughly dry, the soil can be removed from the roots. Then they should be placed in a frost-free cellar, where the temperature varies from 40 degrees to 55 degrees Fahrenheit. During the winter if the roots show signs of shriveling, they should be covered with several thicknesses of paper and water sprinkled on the paper, the dampness restoring the roots to their natural condition.

Bulbs

The early spring flowers produced from bulbs planted in the fall are always greatly admired. There are many varieties of bulbs and from these varieties a great many different colors can be obtained. The bulbs of hyacinths, tulips, narcissuses, crocuses, scillas and snowdrops can be purchased from the different seed stores during the early autumn and should be planted in the ground during the months of September and October. The soil should be dug about 15 inches deep and enriched with plenty of well-rotted manure. The depth of planting

varies with the various kinds of bulbs.

Hyacinths should be set six inches deep and about six to eight inches apart. The narcissus should be planted six inches deep and from eight to ten inches apart; the tulip five inches deep and from five to six inches apart. The crocus, snowdrop and scilla may be set three inches deep and from three to four inches apart.

After planting, the surface of the bed should be leveled with the back of a rake. Later when the surface is frozen the bed should be covered with a coating of light manure or leaves for winter protection. This covering should be removed in early spring.

Summer Bulbs

Summer bulbs, such as Caladium, Cannas and Gladioluses, are planted in the garden in the spring. Caladium and cannas do best if first planted in pots during the months of March and April and kept indoors until sometime in May, when they can be planted out in the open ground.

The most popular of the bulb plants is the gladiolus, which will grow in almost any soil or climate. These beautiful flowers are not only very effective as decorations in the garden, but are very valuable as cut flowers. In preparing the soil for planting it should be well pulverized and a liberal application of rotted manure added. (Fresh stable manure should be avoided.) It is best to dig and fertilize the bed the fall before planting. The bulbs may be planted as early in the spring as the ground will permit. Those planted in April will commence blooming in July and by successive planting every two or three weeks until June, flowers may be had continually from July until the frost sets in. In planting the depth may vary according to the kind of soil in which they are planted. In heavy soils they are usually planted two inches deep, in medium heavy soils three inches, and in light soils four inches deep. Ordinarily when planted in a bed or group the distance between is from four to six inches, but if planted eight inches apart and then two or three weeks later another lot of bulbs planted in between them, one can secure a long season of flowers in the bed. If bulbs are planted in a row the distance can be from ten to fifteen inches apart. After the frost has set in the bulbs should be dug up with a spade or digging fork and left in a dry place to ripen. When thoroughly dry, the top should be cut off close to the bulb and the roots and remaining soil removed. After this the bulbs should be stored away for the winter in a dry frost-free place.

THE HIGH COST OF SPEED

"The driver who persists in operating his motor car at high speeds may elude constables and police, but he cannot escape from the penalties which natural mechanical laws levy upon his car. Here are ten reasons why it is expensive, dangerous and inconsiderate of others to speed.

"Tires last about twice as long on a car that is driven at 15 miles an hour as upon cars driven at 30 miles an hour. Speeding generates heat, which is an enemy to rubber.

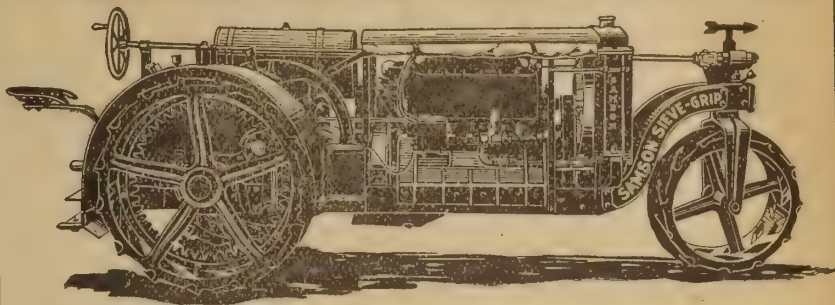
"Driving a car around a sharp corner at 25 miles an hour does more damage to the tires than 200 miles of straight road work. Excessive side pressure on tires may pinch the tubes, and it always strains the side walls of the casings.

"High speeds are likely to cause skidding and breakage of springs and steering gear, any of which are dangerous when speeding.

"In proportion to the mileage obtained, high speeds require more gasoline and oil than a moderate rate of traveling.

"Driving a car at excessive speed, especially over rough roads, subjects

SAMPSON SIEVE GRIP TRACTOR



This tractor delivers 12 horsepower at the draw bar, 25 horsepower at the belt, burns kerosene or distillate, pulls three moldboard plows six to ten inches deep at two and one-half miles per hour, averaging one acre per hour on a fuel consumption of two and one-half to three gallons of fuel per acre plowed. Weight 5,700 pounds. Price \$1,600.00, delivered on cars at Salt Lake. Tractors on hand for immediate delivery.

UTAH IMPLEMENT-VEHICLE COMPANY
SALT LAKE CITY

Spray Your Trees Now

Corona Dry Arsenate of Lead will give the Best Results.

Write today for Free Booklet. "How to Control Orchard Pests"

PORTER-WALTON CO.
Salt Lake City.

\$40.50 Los Angeles
and Return
Tickets on Sale Daily
June 15th to Sept. 30th

Diverse Routes Via Rail and Steamer, Including San Francisco

Proportionately Low Fares for Tickets Including San Diego, Portland, Seattle.

Stopovers at All Points. No Validation Fee.
Final Limit October 31, 1917.



For Reservations and Routings, see

Local Agent, or Address

WM. WARNER, A. G. P. A.,
Salt Lake City, Utah.

the bearings to enormous strains.

"High speed may cause crystallization of rapidly moving metal parts that are subject to strain, and these may break at any time without warning.

"High speeds interfere with the accuracy of steering, as is shown by the number of reckless drivers who have gone over banks and into ditches, especially on curves.

"It is a strain on the eyes and the nerves of the driver and also of the other passengers in the car.

"Finally, it is a menace to the pleasure and safety of others who use the road.

"The majority of modern motor cars develop their maximum efficiency with

lowest expense at speeds ranging from 15 to 25 miles an hour, depending on the make of car and condition of the road."

NOTHING LIKE THAT AT ALL

"Do you assimilate your food, aunty?"

"No, I doesn't, sah. I buys it open an' honest, sah."

JUST LIKE MILK

A small girl in the primary department excitedly told the teacher:

"We got a new baby girl at our house. Dr. Andrews brought her."

Another little girl, on the other side of the room, said: "We take off of him, too."—Country Gentleman.

HOME

RICE, A CONVENIENT STARCHY FOOD

Washington, D. C.—Although rice has been recognized as a good food in the United States since early colonial times, and in some form or other is generally liked in all parts of the country, it has not been given so important a place as a staple article of diet as it deserves.

In some sections rice has been used for the most part as a breakfast cereal or as a foundation for pancakes, croquettes or desserts. In regions where it is grown, however, it is used principally as a vegetable like potatoes; and in place of dishes like macaroni and spaghetti, combined with cheese and similar foods. This use well may be extended to regions where rice is now used chiefly for making puddings and other desserts.

When rice is used in quantity in the diet, particularly as a substitute for potatoes, care should be taken to supply fruits and vegetables generously in order that the mineral substances which the body needs may be provided.

Rice is nutritious and palatable and digests well. It may be cooked quickly without the necessity of troublesome preparation, and without waste. Taking everything into account, rice well may be given a more important place in the diet at this time, since a greater crop was produced in the United States last season than ever before. Late statistics place the 1916 crop at 40,702,000 bushels, against 28,947,000 bushels in 1915, and 25,265,000 bushels in 1914, for the five-year average 1911 to 1915, inclusive. The world crop of rice also is greater than for many years. Rice ordinarily can be obtained at prices which make it, in comparison with other foods, a reasonably economical addition to the diet. With the present greatly increased stock of the domestic product in the country, even a somewhat increased demand should not alter greatly the relation of rice prices to those of comparable foods.

As a staple article of diet rice may be boiled in salted water and used like potato or sweet potato as a vegetable at a meal at which meat, eggs, beans, gravy or other foods rich in protein are served. Wholly or partially cooked rice can be used with cheese, minced meat or poultry, fish, eggs, beans, etc., for a variety of made dishes, the combinations constituting dishes in which most of the needed food elements are present. It also may be used as a major or minor ingredient in stews and soups.

Instead of serving rice plain as a vegetable it may be stewed with tomatoes, cooked in a double boiler with tomato juice, soup stock or milk, or it may be seasoned with curry powder, onions or other seasoning materials. By using skim milk in this way a particularly economical dish is produced.

As a cereal for breakfast, rice may be boiled in milk and sweetened, or eaten with butter and salt. If it is desired, dried fruits, such as dates or raisins, may be cooked with the rice. Cold, boiled rice, mixed with pancake or muffin batters of wheat, buckwheat or corn meal, makes a pleasing addition to such food products, reduces the quantities of other ingredients needed and furnishes a method for using the leftover cereal. Cold boiled rice also may be used with or without a little meat, chicken or seasoning vegetable for croquettes; and with eggs, sugar, milk or other ingredients needed and furnishes a puddings and other desserts, as an examination of almost any good cookbook will show.

The best appetiser is the one we never try—a fast.

SOUPS WITHOUT MEAT

By Mary Johnson.

The price of meat is high so recipes of this kind will be helpful. Quantities given are for six persons.

*Tomato Soup

Stew $\frac{1}{2}$ can of tomatoes and pass through sieve; rub 1 tablespoonful of butter and 1 of flour to a cream; have ready a pint of scalding milk into which stir $\frac{1}{2}$ teaspoonful of soda. Pour the strained tomatoes in a soup pot. After bringing butter and flour almost to the frying point add to the pot, pour in milk and let all come to a brisk boil. Season with salt and pepper and serve hot.

Potato Soup

Boil 3 good sized potatoes and 1 onion; press through colander. Beat into this a tablespoonful of butter, put in sauce pan with a quart of scalded milk; salt and pepper to taste, boil 5 minutes and add 1 tablespoonful of parsley.

Cream of Asparagus Soup

Open and carefully wash a bunch of asparagus; then retie and put in boiling water, boil gently for 45 minutes or until perfectly tender; take from water, cut off tips and set aside; put 1 pint of milk on fire; press asparagus stalks through sieve and add to the milk, cream 1 tablespoonful of butter with 1 tablespoonful of flour and add to milk, stir constantly until it thickens, then add tips.

Puree of Pea

Heat $\frac{1}{2}$ can of large American peas; press through colander. Add a pint of milk, salt and pepper. Cream a tablespoonful of butter with 1 of flour and stir in. Boil 10 minutes and serve at once.

Corn Soup

Boil $\frac{1}{2}$ can of corn in a $\frac{1}{2}$ pint of water until the corn is tender; pour in pint of milk and stir in 1 well-beaten egg. Cream a tablespoonful of butter with 1 of flour, add salt and pepper and mix in slowly. Let boil 5 minutes and serve at once.

Puree of Beets

Press 6 boiled beets through colander. Cream together a tablespoonful of butter and 1 of flour; add salt, pepper and a dash of grated nutmeg. Let a pint of milk come to boil and stir in above mixture, add beets. Boil 5 minutes and add a tablespoonful of lemon juice and a tablespoonful of sugar. Serve hot.

SUGGESTIONS FOR THE KITCHEN

Linoleum is very popular for a wood floor covering. Coat it with a good varnish or paint and renew once a year. Never wash it with soap. Use an oiled mop or wipe it with water and oil to keep from cracking.

Have nothing on the floor that will require bending down, and nothing up so high that you must stretch to reach it.

The strictly sanitary flooring is of tiles, with a slight slope toward the middle, and a drain; a hose will clean it off. But a tiled floor is expensive, and cold to the feet unless covered with rugs or rubber mats.

A dust chute in the corner of the kitchen saves using a dustpan.

If your kitchen table has a shelf, cut an eight-inch hole in one end and stand a pail underneath on the shelf; when you are preparing vegetables, all peelings and refuse may go through the hole into the pail.

When your refrigerator is so low that you must stoop to put things away, raise it by setting it on blocks of wood.

A yard of picture-molding nailed to the wall near the stove, with two lengths of picture-wire, four or five inches apart, parallel with the molding, will hold pot lids. On the nails at the end hang hot dish-lifters or holders.

Oilcloth, covered with a coat of paint, makes splendid wall covering and will wear indefinitely.

Read this Extract from President Wilson's Proclamation

"Let me suggest, also, that every one who creates or cultivates a garden helps, and helps greatly, to solve the problem of the feeding of the nations; and that every housewife who practices strict economy puts herself in the ranks of those who serve the nation. This is the time for America to correct her unpardonable fault of wastefulness and extravagance. Let every man and every woman assume the duty of careful, provident use and expenditure as a public duty, as a dictate of patriotism which no one can now expect ever to be excused or forgiven for ignoring."

Up to June 15th you can plant corn and beans, and have a good stock of both, plant all you can, it is needed.

Vogeler Seed Co.

SALT LAKE CITY, UTAH

Many women use a china closet opening into the kitchen on one side and into the dining room on the other; this is only possible where no pantry intervenes. It will save time and steps.

Have a kitchen garden in your window all the year round. Chives and parsley grow easily.

If the family eat breakfast at different times, build a breakfast nook into your kitchen; it is also useful for the woman who eats her luncheon alone and saves many steps if you do not keep a maid. In the far west the breakfast alcove is an accepted feature.

Several electric light sockets placed at various heights will cost little in the original installation and prove of immeasurable comfort. Have a socket over the sink, another near a table for attaching a motor equipment; one in the broom closet for your iron, and so on.

Put a roll of absorbent paper towels over the sink; besides drying your hands on them, you can use them for wiping grease from the pans, and a dozen other things.

Although glass cooking dishes have been on the market a comparatively short time, hundreds of homes have installed them. They are not only splendid for casserole cooking, puddings, pies, and so on, but are attractive to look at, besides saving time in serving and minimizing the number of dishes to be washed.

A telephone extension in the kitchen has saved many a woman's nerves; she need not leave her food to burn while she runs to answer the insistent ringing out in the front hall or up on the stair landing. What it costs you in money it may save you in temper.

An instantaneous water heater attachment, which by the turning on of the hot water faucet in any part of the house heats the cold water to the boiling point in a few seconds, will down the fuel bills.

Put casters on your work table and

A Quick Energy Builder

Mountain climbers always carry some milk chocolate, candy or lump sugar on their hikes. Soldiers of all countries are fed sugar, in these various forms, to relieve fatigue.

EXTRA FINE Table and Preserving Sugar ABSOLUTELY PURE

This pure sugar gives quick results in energy. If you are very tired and will nibble a bit of sweet or milk chocolate, or eat a couple of lumps of sugar or any other confection, you will feel refreshed within a few moments.

Made by

UTAH-IDAHO SUGAR CO.

move it about wherever it is most convenient.

Have plenty of hooks in various convenient places; also a memorandum pad to jot things down.

A mixture of kerosene and soap applied once a week is one woman's discovery of the way to keep a porcelain sink bright.—Pictorial Review.

RICE IN GREEN PEPPER CASES

Medium sized sweet green peppers, 2 tablespoonfuls butter, 1 tablespoonful tomato catsup, 1 tablespoonful chopped celery, cooked rice, 1 cupful chicken or veal, salt and pepper, buttered bread crumbs.

Select peppers of a uniform size, cut off a piece of the stem end of each. Parboil them five minutes after removing the seeds and inner white lining. Mix the rice, to which the butter and seasonings have been added, with the chicken or veal, and stuff the peppers about two-thirds full with this mixture; then cover with buttered bread crumbs. If preferred, the bread crumbs may be omitted. Place in a baking dish with about an inch of water or stock in the bottom and bake for about half an hour in a moderate oven.

RICE MUFFINS

Two cupfuls flour, 2 cupfuls milk, 2 teaspoonfuls baking powder, 1 tablespoonful butter, 1 teaspoonful salt, 1 tablespoonful sugar, 2 eggs, 1 cupful cooked rice.

Sift the flour, baking powder and salt together, also the sugar; then rub in the butter. Beat the eggs until light, and stir into the milk, then add the rice. Mix this into the dry ingredients, and beat to a smooth batter. Pour into muffin pans and bake in a moderate oven until nicely browned, which will take about twenty minutes.

RICE IN TOMATO CUPS

Large ripe tomatoes, 1 tablespoonful butter, rice, salt and pepper, chopped parsley or onion juice, grated cheese.

Cut a thin slice from the tomatoes—these should be washed, but not peeled—and remove part of the pulp. Season the cooked rice with butter, salt, pepper and chopped parsley, or onion juice, to taste. Fill each tomato cup with the mixture, and grate over the top a little American cheese. Place in a baking dish and bake in a moderate oven until the tomatoes are tender and the juice has blended with the rice. A little water may be put in the baking dish with the tomatoes, but no more than an inch deep.

CHICKEN IN RICE CUPS

Soft boiled rice, celery or parsley, 1 egg, cooked chicken, cream sauce, seasoning.

Cook some rice until quite soft and mix into it the beaten egg. Line buttered cups with this rice about an inch thick. The rice should be seasoned. Chop the chicken and season with minced celery or parsley and a little onion juice, if liked. Add a quantity of cream sauce, until of the right consistency. Fill the cups with this mixture, and cover with a layer of the rice and bake for about fifteen minutes in a moderate oven. Invert the cups, and carefully remove the rice cups so they will not break. Serve on a platter garnished with parsley; or a sauce can be served around them. Veal or any cold cooked meat can be utilized in the same manner.

HOME-CANNED CHILI

"I want to tell you about a little experiment that I worked out the other day. While we were canning beef I decided that I wanted to make some chili con carne to can.

"I boiled three quarts of dry beans, ground five and one-half pounds of beef, one-half pound of suet and five small red peppers. I mixed the above with three quarts of seeded tomatoes, and cooked all thoroughly before packing into jars for canning.

"Imagine my astonishment when I learned that I had 30 pints of chili con carne which would have cost \$6.80 to buy it factory-canned."—Farm and Fireside.

TO CLEAN POLISHED FLOORS

Use equal parts of linseed oil, turpentine, and vinegar. Put in a pan and use a rag as though you were washing with water. A teacupful of each will clean four ordinary rooms. This is nice for cleaning woodwork, and will dry in a few minutes.—Farm and Fireside.

SHALL WE BITE GRANITE?

Only by hammering the truth home continuously, persistently and insistent-ly can the people of the United States be made alive to the gravity of the war we are engaged in.

From the moment Germany cast the flaming torch into Europe her people were warned that it was a war they must fight for very existence. She was mightily prepared, mightily armed, immensely superior to her enemies in preparation and in equipment. Yet her rulers permitted on utterance of false optimism.

On this side of the world the optimists have been permitted, even encouraged, to pull the wool over the eyes of the entire nation. We slept and dreamed sweet dreams on a bed of roses. We saw the Western Hemisphere rushing headlong to starvation and made no preparation to expand our agriculture. We waited until the eleventh hour to arm.

We are still woefully unprepared for the worst that can happen!

A long war will bring appalling suffering to all our people, but a long and terrible war is ahead of us unless every last man and woman in the nation rouses himself and herself to the peril and does.

Do something! Do it now! Keep on doing it! If you are not chosen to bear arms wield a hoe, guide a plow, drive a tractor. Plant! Cultivate! Reap! Millions must toil in factories, in shipyards, in arsenals, in the mammoth tasks of transportation and distribution. All must be fed abundantly this year, next year—who knows how many years?

Shape your agriculture; put your house in order for a long pull—for the mightiest get-together effort the world has yet witnessed.

We have been building the edifice of our Republic for one hundred and forty years. A year of shirking and slacking indifference may crumble it to ashes.

Germany threatens to make our President "bite granite." She means that she hopes to lead this nation to serve her Kaiser; to do unto us as she has done unto Belgium, Northern France, Serbia; to blast our cities with shells; to overrun our valleys and plains with legions of destroying uhlans.

And if our people sleep and dawdle, shirk, slack and slink from the duty that every last man and woman must perform either in the city or in the country, it is not impossible that Germany may accomplish her dreadful wish.

Let us prepare for the worst possible; let us do to the utmost and uttermost! Let Germany know that we shall fight to the last man and horse before we bite granite!—Country Gentleman.

To eat what you like, and all you like, may be a merry life, but it will be a short one. The curse of modern life is overfeeding."—Dr. Frank Crane.

A RAPID THINKER

An old man living in South Berkshire was leading two lively calves out to early pasture in the morning. When he came to the field he tied one of the calves to one of his bootstraps and the other to the opposite bootstrap, while he opened the rickety gate. The calves ran away. When he was picked up his wife asked him:

"Didn't you know any better than to do a foolish trick like that?"

"Yes," he answered. "I hadn't been dragged four rods before I saw my mistake."—New York American.

USEFUL DISEASE

To a native of a certain section of the southwest that is well known for its malarial tendencies a St. Louis traveling man said:

"I notice that there is a great deal of ague hereabout."

"Yes," was the laconic response.

"That's a great drawback. It unfits a man entirely for work, doesn't it?"

"Generally it does," said the other. "Still, here on my farm, when my man



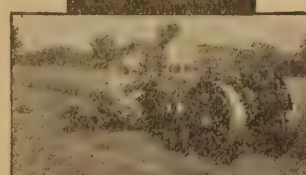
You Ride the Tool —Not the Tractor

See how the operator of a Moline Universal Two-Wheel Tractor sits on the seat of the implement just as he would if he were driving a team. You know you couldn't ride your horses and do a good job of cultivating, plowing, drilling, mowing or any other kind of farm work. Neither can you do it with a tractor. With the Moline-Universal Tractor you sit where you can watch the work the implement is doing. You simply guide it with the steering wheel—easier than you can guide a team—everything is right at your finger tips with plenty of power. You can work as many hours as you wish in all kinds of weather—on all kinds of jobs.

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Does All Farm Work Without Horses

**DRILLING****HARVESTING****CUTTING CORN**

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The Moline Line Includes:

Corn Planters, Cotton Planters, Cultivators, Corn Binders, Grain Drills, Harrows, Hay Loaders, Hay Rakes, Lime Spreaders, Mowers, Manure Spreaders, Plows (Chilled and Steel), Reapers, Scales, Seeders, Stalk Cutters, Farm Trucks, Vehicles, Wagons; also

Stephens Six Automobiles

- It is heavy enough to do all farm work, yet light enough to work on soft plowed ground without packing the soil.
- It will cultivate as well as plow.
- It will do your discing, harrowing, planting, mowing, haying, harvesting—in short, anything you can do with horses and all belt work on the average farm.
- It will do all this easier, quicker, cheaper than with horses.
- It pulls the load of 5 horses and furnishes 10 to 12 horse power on the belt.
- It is made and backed by one of the oldest, strongest, most dependable farm implement companies in the world, and built in the largest tractor factory in the world.
- It is the only tractor which will do all farm work without horses.
- It is low in first cost and inexpensive to operate.

Costs Less Than 4 Horses Does the Work of 7 Horses

Write for our Catalog Folder and read how everywhere farmers are solving the power and hired help problems on their farms; how they are doing their farm work easier, better, quicker, and making more money. Learn how you can make your work easier and get it done on time and grow bigger, better crops. Write today.

MOLINE PLOW CO. Dept. 33
Moline, Ill.

John has a right hard fit of the shakes and, stranger, he brings the butter in-
we fastens the churn-dasher to him, side of fifteen minutes."—Exchange.

SUGAR BEETS

CULTIVATION OF SUGAR BEETS

By J. C. Wheelon.

In a former article we left the ground prepared for sugar beets, having prepared the land the previous fall by leaving the ground plowed and without any further work in discing or harrowing having been done following the plow.

We want this ground as rough as the plow leaves it in order that as much snow and rain as fall on the field will be held there.

As soon as the ground is dry enough to work without baling up or puddling, work down with a light harrow; follow it once with a good float or a leveler and harrow lightly without any delay, and the ground is ready for the beet drill. If for any reason planting is delayed, harrow again just before planting. This is done, first, to kill the young weeds, and, second, to give the final touch that brings and holds the moisture nearer the surface to facilitate the quick germination of the seed. The idea is to prepare the soil as quickly as possible in the spring, with as little work as possible for the purpose, first, to eliminate the danger of losing the moisture by working up the surface too many times, and, second, to be ready to plant early and thereby take all the advantage of the moisture as early as possible and give the crop a start.

Again, the last harrowing should be done crosswise to the direction in which the planter will run. The ground after harrowing is left in a series of small ridges between which are depressions left by the harrow teeth; if the planting is done parallel with the harrowing many of the rows are apt to be planted in the ridges and are too deep for the plants to come to the surface, then, too, many rows may be planted in the depression and the covering will be so shallow that the seed fails to sprout because of lack of moisture. If, however, the planting is done crosswise to the harrowing there will be surely a point in the seed row between the lowest depression and the deepest part of the adjoining ridge, where the moisture and the depth will be just right for complete germination and we are at least more certain of a good stand of plants.

Irrigation Before Planting

In many districts it is found necessary to irrigate before planting because of a light winter precipitation. In this case the irrigation should be done not in the spring, but in the previous fall. The last plowing for preparation should be done early enough to permit furrowing and irrigation before the ground freezes; the weather is cool and evaporation is very light, the ground is loose and the water will reach to a greater depth in the soil than at any other time of the year, and if the soil contains enough humus to produce a paying crop its moisture holding capacity is very great. Leave the ground as it is after fall irrigation so the corrugations will catch and hold as much of the winter precipitation as possible. In the spring go on with a spring-tooth harrow first, then follow with a light harrow, the float and harrow and planter as rapidly in succession as possible.

Top Dressing

If manure is available, spread as fine as possible and not more than four to six tons per acre applied in the fall, during the winter or in the spring. Work it into the soil with the spring-tooth harrow and follow with the harrow—float—harrow and planter. This applies to the fall irrigated land as well as that non-irrigated. We want this manure as near the surface as we can keep it as it warms the soil; holds the moisture and prevents baking and cracking.

Cultivation

The first cultivation should begin as soon as the beet rows can be seen and before the thinning is done. The

weeds have started and their tender foliage is readily decomposed, and when turned under it forms a mulch which retards somewhat the loss of moisture of the air.

There is another function that this, and all future cultivations, for that matter, perform and which is little understood and still less appreciated; evaporation is constantly liberating moisture from the soil to the atmosphere, and as this moisture is passing up through the soil it carries in solution every variety of vegetable and mineral plant food, and that, too, in its most refined or nitrified state for immediate introduction to the roots of plants. When the surface is reached the air takes up the pure moisture in the form of vapor leaving the solids to crystallize on the ground. This if of absolutely no use to the crop because neither the soil organisms nor the plant roots will operate on the exposed surface of the soil. When this thin shell of soil is turned under by the cultivator these plant foods are readily available to the roots of the struggling young plants. This is only one of many things that can be considered in tilling the soil, and the results are in close measure to the care with which the small details are carried out. It is often the little things that make for success; the careful merchant looks after the nickels and dimes; why should the farmer ignore the small change in his operations? If the mathematician neglects one phase of a complicated formula the solution of the problem is sure to be wrong. The farmer must look to his workmanship for his profits. The ground without it will produce sage brush and June grass. The land is only the foundation for the superstructure; it is the workbench upon which the workman brings the material and fashions the beautiful, the useful, and the wealth giving products.

By close attention to cultivation after the crop is thinned, moisture enough can be conserved to grow the beet until the habit to form is established. This should be long and tapering and water should be denied to the young beet while it is in this formative period so that the tap root will reach well down in the soil in its search for moisture. When the plant is seen to have nearly exhausted its ability to go deeper irrigation should be applied in only quantities and at such periods as will cause the beet to build out in diameter, when large tonnage can be expected. When watered too early or too often the beets will grow flat with a short tap root and will yield a light tonnage. When cultivating to proceed the irrigation the cultivator should have a shovel attachment that follows the blades for the purpose of making the furrow for irrigation.

After the first irrigation it is very essential that the field should be cultivated. At this season the soil is teeming with the organic life and the conversion of plant foods is enormous, the weather and soil are warm, evaporation is at its height and while the water that is applied to the soil by irrigation is passing down into it much of the moisture is not only retarded by the tension of the atmosphere, but is brought to the surface again heavily laden with plant foods in solution resulting in even greater deposit of elements on the surface than cited above at the first cultivation and should be turned under. Also many cracks will be filled and a valuable mulch will be made to retard further evaporation. Oftentimes this will be the last cultivation and the shovel should be attached to provide the furrow for the future irrigations.

In the writer's own beet field the foliage on many parts of the field had become so heavy and dense when the ground had got dry enough to cultivate after the first irrigation that cul-

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The New Perfection Oil Cook Stove—the stove of steady habits.

Perfect combustion *inside* the Long Blue Chimney turns all the oil into heat and keeps all the heat at work. No soot, no odors, no broiling kitchens.

The New Perfection cooks fast or slow as you like. You can see where the flame is set and there it stays. Easy to light.

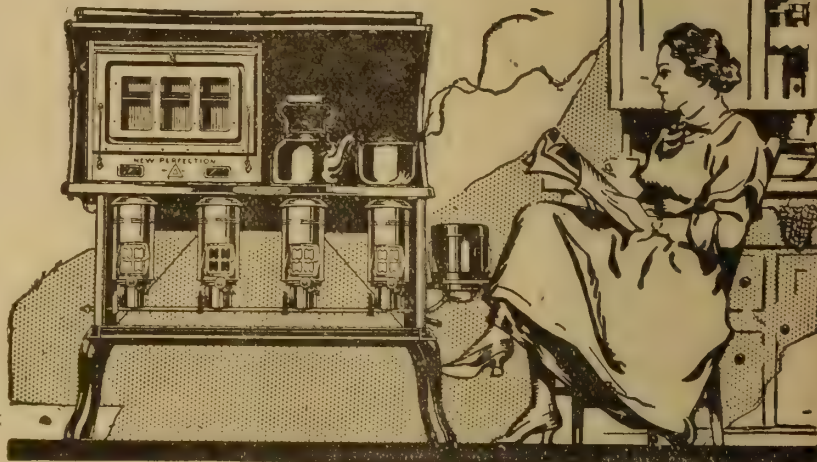
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For best results use Conoco Safety Oil.

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Our Service And What It Means to You

WE WANT TO RUN OUR BUSINESS SO THAT YOUR BUSINESS WILL BE OUR BUSINESS

Running our business right is, as we see it, making our business your special friend. Doing that, we invite the special friendship of your business.

We desire your personal friendship—it is a pleasure. We desire your business friendship—it is a necessity.

It gives us joy to know that you like us personally; greater joy to know that your business and our business are getting along mightily well together—going hand in hand, so to speak.

So we run our business to make it worth while to your business. That worth-while feature is necessary to business friendship. You can't measure personal friendship in dollar and cents, but you have to measure business friendship in just that way.

That is why we sell implements that are famous for their quality and are adapted to the needs of

this community. That is why we keep our repair and supply stock organized so that we can serve you quickly when time means much. That is why we keep in force many other special features that are sure to be profitable to your business.

The business friend in need is always the friend close at hand. That's a great advantage of our business. Our business doesn't call to your business "like a friend's voice from a distant field," but like a friend's voice right at your side, ready to help in the quickest and most effective way.

If you are not already on our big calling list, come in and let our business shake hands with your business.

Consolidated Wagon & Machine Co.

UTAH IDAHO WYOMING NEVADA

tivation was abandoned for the season.

While cultivation is of so much importance it is equally important to know when to stop. If the foliage of the sugar beet becomes so heavy as to cover the ground or nearly so, cultivation breaks the leaves and injures the plant.

The leaves of the sugar beet perform the important function of inhaling from the air to the beet the carbon-dioxide from which it derives the gums, the sugar, the starch and much of the cellulose that gives the sugar beet its commercial value.

It is not unusual for a healthy sugar beet to grow eighteen leaves having

a surface area of from thirty to forty square inches each, counting both sides, making some 600 square inches of leaf surface to the plant. The cross-section of the leaf under the microscope appears like the skeleton of a frame barn enclosed within walls in which are countless transoms or openings through which are admitted the elements from the air.

It has required a century of unremitting effort by careful seed selection to develop this function in the sugar beet. It is, therefore, easy to understand that when the leaves are destroyed by horses' hoofs or the cultivator the growth of the beet is retarded until new leaves are grown to replace them

THE REGERMINATION OF SUGAR BEET SEED

By Reuben Hansen.

The value of seed of any kind is determined by the all-important factor of viability, because the future crop depends upon the number of seeds that germinate and the number of plants that are able to survive after germination has taken place. Crop failures can be seen in any locality. These are often due to the planting of poor seed. Farmers often feed their best product and use the remainder for seed, especially is this true with small grain and potatoes. When this is done the poorest, often infected with disease and low in viability, has been sorted out and is saved for planting. In fact, some farmers believe that anything is good enough for seed. The slogan of every farmer should be, so far as the planting of seed is concerned, "The best only is good enough."

It would be well for every farmer who plants large quantities of seed, especially if it has been shipped from a long distance, to secure an average sample of the seed and test it for viability before purchasing or plant-

ing. This can be done at home in a very short time and at low expense.

The writer conducted an experiment at the Utah Agricultural College on the regermination of sugar beet seed. The object of the experiment was to determine the average length of time, that sugar beet seed could germinate and dry out and still be able to regerminate.

The seeds were divided into ten lots, each lot was allowed to germinate from one to ten days and then taken from the seed germinator and dried and again returned to the germinator for regermination. As a result the number of seeds that regerminated when kept in the germinator for only a short time increased in number up to five or six trials then slowly decreased until there were none that responded. While on the other hand those that were kept in the germinator for from seven to ten days and then taken out and dried the first germination was the largest and the number that regerminated in each successive trial decreased rapidly until none responded.

This experiment shows that when sugar beet seeds have been germinating from one to four days, under proper moisture and temperature conditions, and then are dried enough to kill the sprouts, there is still a chance for the seeds to regerminate if conditions are right, because only a small part of the energy that is contained in the seeds has been used up in the first germination. If germination has been going on for a period of seven or more days, under proper conditions, there is but a small chance for regermination to take place because the greater part of the seeds has been used up in the first germination.

These results might be applied to field conditions. That in case beets were planted and the soil dried out before the sprouts appeared above the ground there might be a chance for the seed to regerminate and produce a reasonable stand if moisture and temperature conditions afterwards become right.

FARM YARD MANURE

(Continued from Page 3)

place on the farm where a man can rob his manure pile faster or more surely than under the eaves on the south side of the barn.

Both drainage and leaching remove the most soluble and readily available part of the manure, as well as the most valuable. These are the soluble potash and nitrogen compounds. Are you willing to have your dollars run off into the brook?

Heating and fermenting of manure are harder to control, but very important and both are the results of too rapid rotting. Rotting is retarded by keeping out the air, keeping manure moist, and keeping the pile covered. Hence a manure pile should be kept packed down and moist.

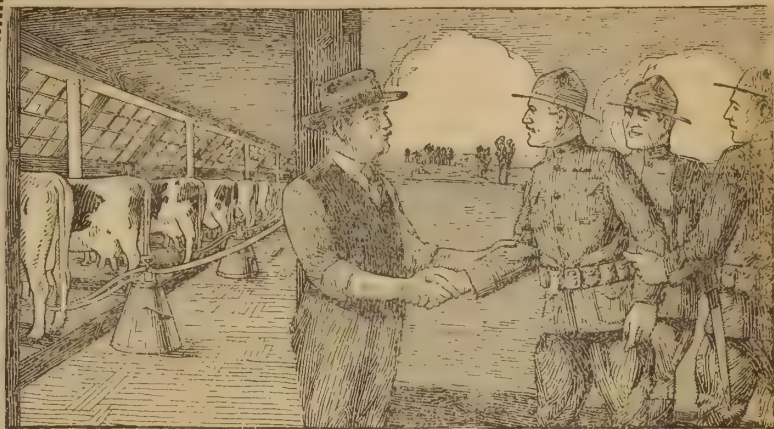
Rotting breaks down the organic matter in both the manure and the bedding and helps change the plant food into available forms. Market gardeners want their manure rotted so it will work more quickly, and this offsets the loss in value. The place for manure to rot and "work" is in the soil and the more it can be prevented from rotting beforehand the greater its value. Rotting combined with drainage and leaching represents all the bad habits manure can have.

To know the real value of manure and how to prevent its loss is important to every farmer.

I will discuss the returns from well manured land in a future issue of The Utah Farmer.

SPRAY TO SAVE THE FRUIT CROP FROM INSECTS AND DISEASES

Fruit, either in fresh, dried, canned, preserved or jellied form, is a food product of recognized value. The maximum production of good fruit at this time is, therefore, of paramount importance. Directly concerned in the production of such fruit are spraying operations for the control of various insects and diseases.



THE EMPIRE ARMY "Mobilized" for Efficient Dairying

"America Prepared and America Efficient" means more than a fully equipped army and navy. It means industrial and agricultural preparedness of a high order—Modern labor saving methods in factory and farm.

The big army of EMPIRE users is prepared to "do its bit"—and more, regardless of the shortage of men that will result when recruiting begins in earnest. With



EMPIRE users will be able to produce more and better milk—milk more cows with less help—safeguard the condition of their valuable cows through the gentle, uniform action of the EMPIRE Teat Cup.

You, too, should be prepared with EMPIRE Equipment to meet the demands that will be made upon you for bigger and better production in this time of national stress.

Come in to see us, or ask us to come out to see you.

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Best Seed costs less than \$3.00 per acre.

Write today for prices

PORTER-WALTON CO.
Salt Lake.

Owners of commercial orchards have long recognized the importance of sparying, but there are many small orchards and so-called home orchards, the owners of which have not adopted spraying operations, or do not give sufficient attention to the work.

No single feature of orchard practice yields so high a percentage of benefit as spraying, often increasing the value of the product several hundred per cent. Every fruitgrower, large or small, has it within his power to save his fruit from loss by insect and fungous pests, and thus add materially to the food supply of the nation. Spraying is now recognized by progressive growers as an exceedingly cheap form of insurance, not only protecting the fruit during the growing season, but insuring its proper keeping in storage.

CATCH THE FLY BEFORE SHE LAYS

It is commonly supposed that the house fly begins laying eggs as soon as she emerges from her filthy breeding place. If this were true, a fly swatting campaign could not accomplish the desired results, because young larvae would be continually feeding, growing and maturing in the breeding media of their ancestors who had been swatted after their eggs were laid.

There is, however, a certain lapse of time between the emergence of the

adult fly and the laying of eggs. This period in which the eggs are being formed is called the "preoviposition" period. It is the most important time in the swatting campaign, for if the adult flies are killed or trapped before they lay eggs, all chances of increase from their offspring are averted.

This period of immaturity is quite short and consequently the time for killing or trapping the egg-filled mother flies is limited. Concerted efforts in any community can, however, rid that community of flies and disease resulting from flies. Flytraps must be used constantly in all places where there are the greatest number of flies. Baiting the traps with overripe fruit, decaying meat or putrefying fish will instantly attract myriads of germ-laden flies. If the traps are used from early spring to late fall, all flies, both egg-filled mother flies and those that may have laid their eggs, will be caught. This will prevent not only annoyance by flies, but will control typhoid fever and intestinal diseases.

Destroy the cause and you immediately remove the effect. Early work, before flies become numerous, is effective.

The employee should always remember that the privileges allowed him by his employer are his by courtesy rather than by right, and he is wise if he acts accordingly.—Merchants Trade Journal.

LIVE STOCK

MAKING PROFIT WITH HOGS

By C. M. Jones.

If the small pigs have not been stunted or otherwise injured the hog is half made when weaned. The sow should be very carefully fed and taken care of. The pigs can be done a great injury in a few days. To avoid as much trouble as possible, give the sow good care and feed so that she will produce plenty of milk which will satisfy the pigs and they will lie down, but if the sow is lacking of milk, the little fellows are in a scramble for something to eat and in this way subject themselves to many dangers. Feed the sow in such a way as to produce medium rich milk. Too rich milk is not healthful, being more liable to cause disorder as thumps, scours and unsatisfactory growth in general. The sow will produce more and better milk and at a lower cost than any other farm animal. This being true, it is necessary to produce plenty of milk by good feeding which will prove of more value at the early age than later.

For three or four days after farrowing, the sow should receive skim milk and oats, bran and linseed meal in the form of a slop. The litter also, as soon as it begins to feed from the trough, should be fed very liberally because good feeding is necessary and feeding at this time pays the largest returns. Sows with large litters will lose flesh in spite of the very best of care, so bear in mind that the best care that is possible at this time is none too good.

When pigs are in the neighborhood of two weeks old they should be encouraged to eat sloppy food, which is put in shallow low set troughs away from the sow. The sow's trough should also be low and shallow so that they can learn to eat by imitation. Into the pigs' trough pour a little sweet milk, just what the little fellows can clean up, each day and no more. As they grow older they will require more. When four or five weeks old they will begin to eat a little corn, which has previously been soaked in clear water for a day at least; with this corn feed ground oats and bran or middlings in a slop. It is best to scald the bran and middlings until skimmed milk is added. Remember that the food capacity of a pig is very small and they require little food at a time, but often. Keep everything clean. Never allow any feed to remain in the trough until stale. The pigs should at all times get plenty of exercise and if they don't get it naturally it is a good idea to drive them about the yards.

If the sow is to farrow twice a year it is best to wean the pigs at about eight weeks of age, as this will give the sow a chance to build up before she farrows again. But if there is only one litter to be raised, I would allow them to run with the sow until 12 weeks of age. I know of many farmers that wean from six to seven or eight weeks of age and wonder why their pigs don't do well.

After weaning, group the pigs 15 in a lot and of about uniform size. This will give them all a better chance at the trough.

Having increased the feed as fast as the pigs demand, the pigs are in a good condition to be turned into pasture when weaned. Pasture will balance the ration, supply cheap feed and the pigs will require less care. A pasture of alfalfa, clover, raps, will more than maintain the health of the pigs and the grain supplied will go toward gains. Grain should be fed at the rate of two pounds to the 100 pounds of live weight. On such feed they will gain one-half to three-fourths of a pound per day. Bear in mind that we are now building the frame upon which we will add flesh and fat later.

The pasture furnishes a large amount of nitrogenous matter and lime which goes to build up the lean meat tissues and bony structure. With

this roughage corn, barley or some other grain must be fed to supply the necessary heat and energy. Tankage or skimmed milk should be fed to build up muscle.

Before starting the fattening period select the sows you desire to hold over for breeding purposes. Take into consideration family characteristics and select from those that have produced best and most profitably. Never kill the old sow while she is doing good work. Having selected the brood sows and placed them in separate quarters, then we are ready for the fattening of the market hogs.

Having carefully constructed the frame work it is easy to put on the filling. It will now be necessary to reduce the amount of coarse feed and feed more palatable food which is rich in fat content, also to reduce the amount of exercise. While a little hay is desired, don't feed much because it is our purpose to especially encourage the production of flesh and fat and for that reason as much concentrated food is fed as possible. A good ration to feed is nine parts corn and one part tankage. The first four weeks of the fattening period use this feed, but the last four weeks I would replace one-half of the tankage with corn. This will put the hog on the market at the age of eight months, weighing 250 to 300 pounds. I would not keep them much longer than this because as they grow older it requires more feed for a pound of gain, therefore reducing the net profit per pound.

Give the sow and her litter dry and clean place to sleep, a place where they will feel warm and comfortable after having eaten a hearty meal. Never allow the bedding to become damp and dirty. A dirty yard or hog house is a place where disease germs multiply freely. Naturally the pigs are subjected to them and continually having to fight them off means taking strength and vitality which has cost money to produce. This will mean that the cost of production is raised under such conditions. It is better to spend the money on good hog houses and improvement on pens rather than spend it for disinfectants and "cholera cures." The best remedy and cure is sunshine and plenty of sunshine is the cheapest and best disinfectant, Dr. Coburn says.

If a hog was to be turned out into a lot where plenty of leaves and straw were to be obtained he would form a bed that would not be dirty. A pig will keep its quarters very clean if given a chance. This surely is a proof that a hog wants to make himself comfortable and clean.

KEEP BREEDING SOWS

Preserve Good Sows for Breeding Purposes—Urgent Need for Increased Pork Production.

A sow is a good investment. This is true even in these strenuous times of high prices of food concentrates. The quotations on these feeds are controlled to a considerable extent by the price at which meat animals sell. Hence concentrates usually command a high figure when hogs on the hoof at large packing centers sell at more than 16 cents per pound. However, record prices for swine as well as feed concentrates have been a great incentive to farmers to "cash in" all the hogs available. That many sows have been included is evident from the fact that on April 1 the correspondents of the Bureau of Crop Estimates reported approximately 3 per cent fewer sows on farms in the United States than a year before. Further, this is the first year that the supply has not increased since 1913.

At this time the marketing of a sow that can be or has been bred is fairly comparable to "killing the goose that laid the golden egg." Although the fecundity of swine is well appreciated by farmers, at times sows are sacri-

ficed when a little forethought would cause them to be retained. Breeding sows multiply five or six times as rapidly as other meat animals. They have an average litter of five or six pigs and may be bred twice a year, although three times is two years accords more with current farm practice. The litters increase in size, on the average, until sows are 5 or 6 years old. However, a large proportion of the sows are sold after producing one or two litters and before they have reached the period of greatest usefulness. Occasionally sows are unsuitable for breeding because of their clumsiness, "high" condition, inactivity, or barrenness; and these, of course, go to market when of proper weight, but the total sows of this class is a mere bagatelle.

In these days when labor is high and also scarce on many farms, the hog may afford "a way out." Hogs utilize refuse and waste grains, damaged grains, and garbage; garnering grain behind cattle or shattered grain in harvest fields, and utilizing slaughterhouse by-products and dairy by-products. They are also largely self-feeders. The modern farm "caterina" gives a pig a chance to make a hog of himself more quickly than he can by the hand-fed route, and it has the added merit of being the cheapest way of producing pork. A sow when she is not developing a litter or nursing pigs can in summer time be placed in a pasture and given very little grain. In winter, possibly the cheap-

est maintenance ration is a combination of grain and hay, such as corn, wheat, rye, or barley, and alfalfa, clover, cowpeas or soy-bean hay. The grain should be limited to 1 or 2 pounds per hundred pounds live weight per day. Sows should be given all the hay they will clean up. Sows which show exceptionally run-down condition from suckling their pigs should be separated from the herd and fed grain until they regain breeding condition. Where pastures are very luxuriant it is possible to carry breeding sows on pasture alone, but the most palatable hay will not keep sows in good breeding condition if fed alone.

Breeding sows are at a premium and the demand for young stock is unprecedented. The hog buyers state in their reports that they are compelled to take anything that looks like a hog. The fluctuation in the number of hogs in the United States is subject largely to the fluctuations in the financial condition of the country. The high prices paid for hogs are a big inducement to farmers to market their hogs, and as stated before, the high prices of corn caused them to cut loose during the latter part of the year. The high prices paid for hogs and an increasing export trade are the two main factors which make the hog business especially attractive at the present time. Millions of farmers would purchase sows to farrow this coming spring if they could, but this is almost an impossibility. Those



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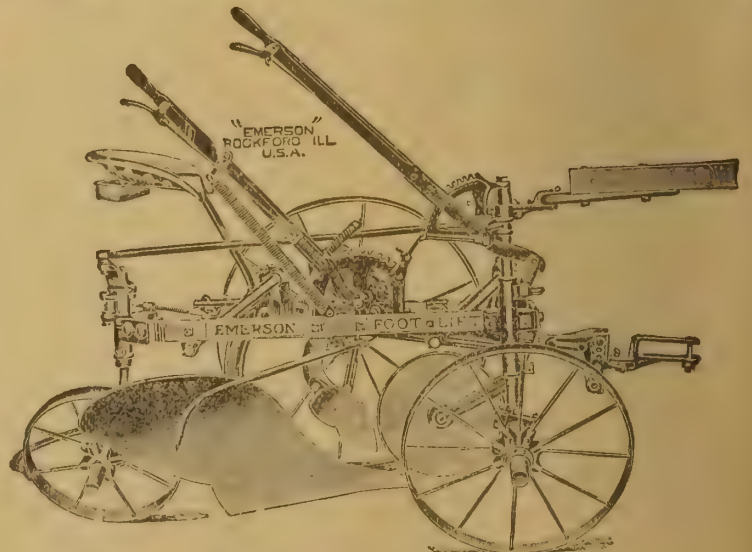
to see the seams and pores of an axle. They're too small to see but they're big enough to cause friction trouble. Use

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on your axle and prevent friction. It is made of the finest grease stock and powdered mica. It fills the pores and gives the axle a bright, hard coating.

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Both levers on the Emerson Foot-lift Plow are on the right hand side. The powerful high left foot-lift enables the operator to take the plow from the hardest ground and with the opposite motion push it into the ground. The feet operate the plow, leaving the hands free to manage the team. The frame is very strong. The dust proof oil tight wheel bearings insure a light draft and long life, one greasing will do fully 50 acres of plowing. If you are interested in plowing write today for our catalog.

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farmers who are fortunate enough to have retained their breeding sows will play an important role in placing spring pigs on the market. The spring gilts from these litters should not be sent to market for meat purposes, but should be retained or sold only for breeding purposes in order to augment the pig crop next year.

HOG RATIONS

By I. D. O'Donnell.

Due to the fact that hogs are raised to some extent on practically every American farm and to the universal use of these animals in marketing field crops, it is probable that more has been written on the subject of hog rations than on any other feeding topic. Because of the great amount of information to be had on this subject no attempt will be made in this article to cover the subject in a general way, but rather simple and effective methods will be pointed out.

We have alfalfa in plenty and this furnishes the best and most economical basis for hog rations. Alfalfa should be considered as a basis for a ration and not an entire ration. I have read accounts of hogs being marketed with profit after having eaten nothing but alfalfa until within a few weeks of the time of marketing. Hogs raised on a practically straight alfalfa ration require a longer time to reach full development and then go to market with poorer finish than is possible on a properly balanced ration. In addition, this increased time during which the hogs are held on the farm also increases the risks to the hogs from disease.

Corn, wheat, barley, oats, field peas, and similar feeds are to be had at reasonable cost. The best plan is for the farmer to utilize his alfalfa and the grain which is to be had most cheaply in his neighborhood, results considered. Corn and alfalfa make an ideal hog ration, and if both are available nothing is to be desired. If corn is scarce or high priced, wheat, barley, oats, peas, mixed or straight, or any one of them, may be utilized profitably with alfalfa. It is generally held that it is economical to grind all grain fed to hogs, and if grinding is not feasible the grain may be soaked.

Beginning with the brood sow before farrowing time, a good ration would be free access to third cutting alfalfa hay in racks, or alfalfa pasture, with from 1 to 2 per cent of the live weight of the sow in corn, wheat, or barley. Skim milk and slops from the kitchen may be added with good results. This ration will keep the sow in good condition and enable her to produce lustrous pigs. The sow will not require food during the first 24 hours after farrowing, but give her plenty of clean water which is not cold. The first feed may well be a slop made of such ground grain as is available, starting with a small amount and increasing gradually until the maximum ration is reached about 30 days after farrowing. At this time she would be receiving daily about 4 to 4½ per cent of her live weight in ground or soaked grain, with free access to third-cutting alfalfa or alfalfa pasture. If alfalfa hay is fed the addition of a few roots, such as sugar beet or mangel, will increase the milk flow. When the pigs are 3 to 4 weeks old they should be given access to slops made of ground grain and placed where the mature hogs cannot reach it. This side feed for the pigs may be gradually increased until when they are 7 to 10 weeks of age they may be weaned. They should be able to make rapid gains on the grain and alfalfa pasture, giving them all the grain slop they will clean up quickly twice each day. On this kind of a ration the pigs should be brought to weigh from 200 to 250 pounds between March 1 and October or November.

After the pigs are weaned the sows may be kept on alfalfa pasture and the grain ration reduced to a small amount, just enough to enable the sow to regain her lost flesh.

There are many variations to the above simple method of feeding hogs.

Among these may be mentioned the hogging down of grain and corn. If the farmer has some experience with hogs and has properly arranged his fencing he may profitably hog off small fields of grain, saving the thrashing bill and some labor.

A great deal of attention is being given the self-feeder plan of feeding hogs, by which they are given free access to both grain and alfalfa. The best results from this plan appears to be had where several varieties of grain are available and the hogs may have their choice and mix their own feed. This plan is worth trying. The principal arguments in its favor are that it is a labor saver, in that the self-feeders are filled and this feature requires no attention until the feeder is emptied by the hogs. Also tests have shown that the hogs reach marketing condition with economical use of grain and in comparatively short periods of time.

Under any plan of feeding there should be before the hogs at all times a mixture of wood ashes, air-slacked lime, sulphur and copperas. A good mineral mixture recommended by the Department of Agriculture is: Charcoal, 1 bushel; hardwood ashes, 1 bushel; salt, 8 pounds; air-slacked lime, 8 pounds; sulphur, 4 pounds, and copperas, 2 pounds.

Hogs require plenty of fresh, clean water. During the hot months shades should be provided. A good plan is to make a roof of boards 3 to 5 feet off the ground, leaving it open on all sides.

Last, but not least, keep the feeding places clean. Cleanliness in feeding hogs is as important as in feeding other stock. The causes of many hog losses from disease are unclean quarters and feeding places.

SELECTING THE HERD BOAR

The time is approaching when the hog breeder must select and mate his breeding herd. It is of prime importance that the boar be selected with care. The expression, "The male is half of the herd," is often quoted. This by experience has been found true. There is a uniform prepotency in both sexes; thus the influence of the two parents on the offspring is theoretically equal. However, the boar has the greater influence on the herd. Each pig in the herd is sired by the one boar, but there are several dams.

A well-selected male used on a herd of inferior sows will make a great improvement in the offspring. However, the use of an inferior boar on well-bred sows will have a correspondingly bad result. The breeder should select his herd boar at an early date, and get him accustomed to his new surroundings. The system of feeding and management is very important in getting the male into the best condition before mating.—W. T. Wasel, Colorado A. C.

FEEDING AND MANAGEMENT OF WORK HORSES

By William Hislop.

The horse is one of the limiting factors in the present food production campaign. He is being called upon to perform more work in less time and at shorter notice than ever before, consequently his management is a most important subject.

Economy and efficiency of farm horse labor cannot be obtained unless the following points be given thoughtful care and attention:

Feed, water, shoulders and harness, feet, teeth, body parasites, barn sanitation.

In order to perform the maximum of work and still maintain his weight and spirit, the horse should receive a comparatively large allowance of easily digested grain and a correspondingly small proportion of palatable roughage. For example, a 1,500-pound horse at heavy farm work should receive from 12 to 15 quarts of grain and 12 to 14 pounds of hay daily, as follows:

At 5 a. m., 5 quarts grain mixture and 4 pounds hay.

At 12 noon, 7 quarts grain mixture and three pounds hay.

At 6 p. m., 4 quarts grain mixture

and 7 pounds hay.

At present prices and from the work value standpoint, we recommend a mixture of 5 parts rolled oats, 3 parts rolled barley and 2 parts bran. On Saturday night it is good practice to replace the grain feed with a warm bran and barley mash containing one tablespoonful of saltpeter to each horse. If changes must be made in the ration they should be gradual and always in keeping with the severity of the work done. If the horse is idle the grain should be diminished 50 to 75 per cent.

Regularity of watering is just as important as regularity of feeding. The horse may be watered either before or after feeding, but preferably before feeding.

Incapacitated from sore shoulders is an all too frequent verdict during the spring and summer seasons. The trouble can be obviated if the collar fits properly, the sweatpad is clean and smooth and the shoulders are washed daily for two to four weeks with cold salt water to cleanse and toughen the skin. Horses that are shedding will require even more careful and prolonged washing.

Lameness and torture from badly trimmed or shod feet are unexcusable. This can be prevented by keeping the hoof walls evenly trimmed and the frogs in constant contact with the ground. As soon as the toes become long and the hoof walls expanded beyond the quarters of the shoes, the horse should be reshod.

When the horse refuses part of his feed, or when he is not thriving, it is well to have his teeth floated by a good veterinarian. Afterwards, the horse will work better and soon begin to pick up in flesh.

Lice and worms are said to diminish the efficiency of a horse one-fourth to one-half. It, therefore, behooves one to get rid of them. For worms give a wine glassful of turpentine in 1½ pints of linseed oil and keep the horse inside until the oil has acted. For lice, wash with a 2 per cent solution of lysol.

Every farm and city horse barn boss should arrange to keep the flies out of the stable, and to insure good ventilation during the coming summer and fall.

SUPPOSE.

If all that we say
In a single day,
With never a word left out,
Were printed each night
In clear black and white,
'Twould prove queer reading, no doubt.

And then just suppose
Ere one's eyes he could close,
He must read the day's record
through,
Then wouldn't one sigh,
And wouldn't he try
A great deal less talking to do?

And I more than half think
That many a kink
Would be smothered in life's tangled thread,
If one-half that we say
In a single day
Were left forever unsaid.

—Author unknown.

THOUGHTS OF HOME

After the battle of Mons, an officer congratulated an Irishman on his conspicuous bravery under fire.

"Well, Pat," he said, "how did you feel during the engagement?"

"Feel, captain," answered Pat, "I felt as if every nail on me head was a band of music, and they were all playing 'Home, Sweet Home.'"

REGULAR

The tailor had called to collect his bill very frequently of late, but without success. Finally, in desperation, he said, vehemently, "Mr. Swift, I must insist that you make some definite arrangement with me."

"Why, surely," replied Mr. Swift, most agreeably. "Let's see. Well, suppose you call every Thursday morning."—Harper's Magazine.

"Am I good enough for you?" sighed the fond lover.

"No," the candid girl replied, "you're not; but you're too good for any other girl."

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For the Prevention of Blackleg
in calves and young cattle

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Use any Injector, but Cutter's simplest and strongest.

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10 dose pkge. Single pills \$1.00
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Insist on Cutter's. If unobtainable, order direct.

Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

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Make the Most of Your Time

SAVING TIME is like saving money when you are threshing. You cannot afford to have all hands sitting idle waiting for your repairs. Insist upon having a thresher that will save your grain and keep steadily at work until the job is done. Hire or buy a

Red River Special

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Threshing Bill

It is guaranteed to be capable of doing more and better work than any other machine made of like size and proportions, working under the same conditions and on the same job. It can be crowded to the limit and still keeps saving the grain. Unlike other threshers, it beats out the grain.

Tractor owners find an ideal threshing outfit in our Junior, the small thresher with high efficiency. Same famous features as Red River Special. Makes home threshing pay. Write

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Battle Creek Michigan

CORN CULTIVATION SHOULD BEGIN EARLY

Start To Kill Weeds And Conserve Moisture Before Plants Are Up If Need Be.

Cultivation should not be delayed in the corn until the field looks weedy. Only a little stirring of the soil is required to kill weeds immediately after they germinate and before they have used much soil moisture, but to destroy weeds that are well rooted, the soil must be worked deeply and thoroughly. Such deep cultivation, not only means more labor but it can not be accomplished without breaking and destroying many corn roots.

If corn land has been properly prepared deep cultivation is not advisable. It should never be done close to the plants after they are a foot high, as much harm would be done by breaking the roots.

If corn land has been properly prepared deep cultivation is not advisable. It should never be done close to the plants after they are a foot high, as much harm would be done by breaking the roots.

To get an early start of the weeds, in many sections or in seasons when seed germinates slowly, it is advisable to harrow once or twice or otherwise to cultivate the field before corn comes up. Limited moisture makes thin stands necessary and it is poor management to allow grass and weeds to rob the corn of this moisture.

Aside from destroying weeds, timely cultivation is beneficial in preventing the loss of moisture by evaporation and also in hastening the warming of the soil. The loss of soil moisture by evaporation continues much longer from a compact, damp surface than from a loose, dry surface, and the evaporation tends to keep the soil cold.

In northern localities and at high altitudes the conservation of heat is frequently as important as the conservation of moisture. Luckily, both heat and moisture may be conserved by good, timely cultivation. Heat is wasted in evaporating or wasting soil moisture. Making the surface loose and dry saves both soil heat and soil moisture.

Cultivating after heavy rains is a good practice. To be most effective the cultivating should be done as soon as the surface is dry enough to work well. If the soil is allowed to dry until it breaks up cloddy, much moisture will be lost, a good mulch can not be obtained, and harm is more likely to be done to the corn roots. As long as rapid evaporation is taking place, the surface will remain cold and the growth of the corn will be slow. In order to cover large areas quickly, cultivators which work two or more rows are a great advantage.

The number of cultivations necessary and the best time for them depend upon weather and soil conditions. Weeds should not be allowed to grow, and a mellow surface should be maintained. In some seasons this may be effectually accomplished with one or two cultivations; in other seasons from four to six cultivations may be necessary.

Nothing can be gained by continuing cultivation in cornfields free from weeds and in which the soil surface is mellow. When the surface is sufficiently loose and dry to reduce evaporation, is open enough to prevent runoff, and no weeds are starting, a cultivation could do no good and if carelessly performed would do injury to the corn.

Corn should be cultivated only when one or more objects will be accomplished by the cultivation and when the total effects will be more beneficial than injurious. The beneficial effects of cultivation are:

1. Preventing weeds from robbing the corn of soil moisture and fertility.
2. Putting the surface in condition to take in rainfall, thus preventing run-off and erosion, which mean losses of water and soil fertility.
3. Warming the soil by drying its surface quickly.
4. Saving moisture by checking its

To Buy

cappillary rise to the soil surface.

Some injurious effects of cultivation are:

1. Breaking the corn roots which otherwise would use some of the moisture of light showers before it evaporates; and
2. Forming large clods and air spaces, thus permitting air to enter and dry the soil.

THE MORAL TWISTED

The telephone in a physician's office rang madly, and the following conversation took place:

"We want the doctor, quick!"

"Who's sick at your house?"

"Everybody except me. I'd been naughty, so they wouldn't give me any of the nice mushrooms papa picked in the woods."

THE BREAKER OF BAD NEWS

Hungry Visitor—And at what time do you have dinner, my little friend?
Terrible Boy—Soon as you've gone.

A little lad was boasting that he worked in a blacksmith shop.

"What do you do there" he was asked. "You can't shoe horses."

"No, sir," the youngster answered promptly. "I shoo flies."—Exchange.

FARMS AND ACREAGE

I am a farmer in Millard county and have lived here all my life. I know values and can put you wise to some A-1 farms. Values are going up, so write me now for sugar beet lands on the west side or lands in the flowing well district on the east side.

N. L. PETERSON,
Deseret, Utah.

OPPORTUNITIES IN FARM LANDS

We have at Elberta, Utah, 50 acres of the finest farm and garden land in the West. It is a very suitable place for a man who wants a small farm at a reasonable price. Well adapted to raising any of the farm products, garden truck, alfalfa and beets. It is located on a railroad giving excellent shipping facilities, close to two mining camps, affording a fine market for garden vegetables, and is also near good schools. Just the kind of a place you will want. Prior water right at \$1.00 per acre if used. See us about this place and let us give you further details.

Another opportunity for the right party at Elberta, Utah, is a 50 acre farm, suitable for the growing of alfalfa, fruit, beets, grain, garden truck or any other farm products. The best kind of soil, with good water right at a reasonable rate. This property adjoins a good school and is located on a railroad. Will take \$3,750 for this place, with suitable terms for payment. This is a real buy for the man that wants a small farm at a good price.

For \$75.00 an acre you can buy 50 acres of Elberta's fertile land, with prior water right at \$1.00 an acre. What do you think of this buy. If you are looking for a small farm at a low price, investigate this further. We will be glad to furnish you with more information.

We are dealers in farm lands. Write us your wants.

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CONSIDERATE

Clarence—"I passed by your house last night."

Dorthy—"I thank you."

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We have many such bargains on good terms. Write us.

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AN OPPORTUNITY FOR A FARM

160 acres in southern Idaho. Full water right, good soil; 75 acres in alfalfa; 50 acres in grain; small house and barn; all necessary implements. Will sell livestock on place at running prices. Will trade farm for Salt Lake income property. This place will stand a thorough investigation.

BUSINESS AND ACREAGE FOR FARM
Owner has eight acres of first-class land within ten miles of Salt Lake City. Good water right; 6 acres in alfalfa; 2 acres of grain. Has also a good grocery business. The farm and business are for sale or trade on basis of \$6,000.00 cash valuation. On exchange owner wants good farm.

FARM FOR SALT LAKE PROPERTY

180 acres in northern Utah. Good soil and first-class water right; 70 acres in alfalfa; 80 acres in grain; 30 acres in beets. This farm is thoroughly equipped with good buildings and farm machinery. Price \$27,500.00. Salt Lake income property, preferably rentable houses, on east side, and some cash.

ORCHARD TO LEASE

Six acres in Salt Lake county. All in full bearing apples, peaches, cherries, plums and apricots. This is an opportunity for the right party.

SALT LAKE BUNGALOW FOR FARM

Five rooms, modern, in southeastern part of city; dark oak interior finishing. Owner wants to trade for unimproved irrigated land with good water right, in northern Utah or southern Idaho. If you have something good, submit it. Price of home, \$5,000.00 clear.

LAND NEAR FLOWING WELL DISTRICT

Good chance for artesian water. Sage brush land; 640 acres near Fillmore. Yourself and several friends could handle this nicely; \$5.00 per acre down, balance on time. Will accept part in trade. Price \$17.50 per acre.

CATTLE RANCH

We know of one of the best cattle ranches in the Inter-Mountain country that is for sale. There are 3,000 acres of deeded land carrying full water right. One thousand acres are in timothy, grain and pasture. The ranch has excellent buildings, all in good state of repair, and is fully equipped in every respect. To completely develop this property and bring it to its present high state of cultivation has taken the lifetime of the present owner. He now wishes to retire. The reserve rights control range for 2,500 head of cattle. On the ranch now there are 125 head of horses and more than 3,000 head of Shorthorns. All high-grade stock. \$140,000.00 will buy the property fully equipped. Will sell cattle at running prices.

ASHTON-JENKINS COMPANY,

47 Main Street,
Salt Lake City.

FOR SALE

640 acres with 168 acres wheat, 50 acres alfalfa, well, fence, 6 horses, harnesses, implements, etc.

800 acres, 320 pasture, 235 acres in wheat and some horses, etc. Will sell part or all. Price and terms reasonable. For further information, write

N. E. MILLER
439 So. Main, Logan, Utah.

FREE FARM LANDS

The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our Committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah.

To Sell

RELIABLE FARM BARGAINS

Now is the opportune time to buy farms. We sold more farms last week than in any other week in our entire business career. People are realizing the necessity of buying farm lands. While prices are so high they may be able to pay for the farm in a very short time. It is up to the people of this country to feed the entire world for a few years to come. If you are interested in getting a farm that will pay for itself soon, we have the following to offer:

We have just bought 800 acres of land in Cache valley that is one of the finest farms in that valley. We are going to cut this farm into 40 and 80-acre tracts, to be sold on easy terms. Part of this land is in alfalfa, part of it in grain and the balance ready to be planted to sugar beets or other crops. All fenced, water piped, so it can be had for each 80 or 40 acres; on the main line of the railroad, and the county road passes through this farm. We will sell this land and you will get five tons of alfalfa per acre a year. At the present price of alfalfa and other crops, this land will pay for itself in a very short time. Prices range from \$100 to \$150 per acre, including water right and improvements. We will sell you from 10 acres to the entire tract.

A number of weeks ago we took over the entire holdings of the Keystone Steel & Wire company of Peoria, Ill. This land is situated in the Bear River valley, right adjoining the town of Tremonton, one of the nicest little towns in northern Utah. This land consists of 40, 80 and 160-acre tracts. We have one or two of these pieces of land left.

In southern Idaho, on the main line of the Oregon Short Line, we are selling 40, 80 and 160-acre tracts of land at from \$50 to \$100 per acre, including improvements and crops. This land can be had on ten years' time at 6 per cent interest, with a small payment down.

On 14th South, just off the 5c car line, we have some beautiful one-acre tracts for sale. \$450 per acre, \$45 down at time of purchase and ten years on the balance at 7 per cent interest. This is a good buy. If you are looking for somewhere to raise your foodstuffs, it cannot be beat.

We have on our listings and own ourselves at the present time several million dollars' worth of first-class property. We feel sure we can suit you as to location, price, terms and improvements. If you are looking for a first-class farm or cattle ranch, we have got what you want. Write, telephone or come in and see us.

We exchange farms for Salt Lake City property.

KIMBALL & RICHARDS
"Land Merchants"

56-58 Main Street,
Salt Lake City, Utah
Phone Wasatch 963

FARM AND RANCH DEPARTMENT

FOR SALE

In Boxelder County, 50 miles from Brigham City, 960 acres of land, 800 under cultivation, 400 in fall wheat, about 40 alfalfa, 12 head horses, harnesses, machinery, buildings, well and equipment. Price and terms reasonable. For particulars write

MILLER BROS. FARM CO.
394 S. M., Logan, Utah.

For the Buyer

THE FARMERS' MARKET PLACE

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

BARGAIN

One 28-inch Minneapolis Separator with self-feeder and wind stacker, and one gasoline tractor at a sacrifice. Both in good condition.

SAM PETERSON & SONS CO.,
147 S. State St., Salt Lake City, Utah.

GROWING OF BEETS IS BENEFIT TO YOUR FARM

Besides providing an absolutely cash crop, a certain market, the growing of sugar beets, the Utah and Idaho, also provides one of the best means of fertilization through crop rotation. Agricultural experts agree that root crops are essential in good farming—sugar beets provide the safest, surest, cash producing crops of its kind.

USE TABLE AND PRESERVING SUGAR

40 % Discount on Eggs

For hatching for balance of season, from Four Best Laying Strains Rose Comb R. I. Reds and White Wyandottas, Single Comb Black Minorcas and White Leghorns. Egg Fertility Guaranteed. Call or Write

E. C. BLANPIED,
Box 29, Milford, Utah.

WANTED Beet Laborers

The Delta country offers exceptional opportunities to farm hands. A good, clean soil; good water and splendid citizens. A new sugar factory at Delta, Utah, is growing 10,000 acres of sugar beets and NEEDS BEET THINNERS AND FARM HANDS. The growers will contract at the following prices:

Thinning, etc., per acre.....\$ 7.50
Hoeing, etc., per acre.....4.00
Topping, etc., per acre.....11.50

With extra pay for all over twelve tons per acre. FARM HANDS CAN GET FROM \$2.00 TO \$2.50 PER DAY AND BOARD.. The Delta country is DRY TERRITORY, a splendid place for school boys to spend the summer months. Write the Delta Beet Sugar Corporation or the Delta Commercial Club, Delta, Utah.

FOR SALE

Single Comb White Leghorn Hatching Eggs from bred to lay stock. Our thirteenth year Prices right.

MODEL POULTRY FARM
Corning California

DUROC-JERSEY BOAR PIGS

that are registered and from the world's greatest families being grandsons of the \$5,000 DEFENDER and the \$2,000 ILLUSTRATOR. Spring pigs \$15.00 each and boars of serviceable age \$35.00 each, that are CHOICE. Satisfaction or Your Money Back.

EDWIN BRICKERT
Beaver Utah

SAVE MONEY ON YOUR LUMBER BILL. WRITE US. PACIFIC COAST SAWMILL COMPANY, Portland, Oregon.

RAG APPLE KORNDYKE 13TH BULLS FOR SAL

From A R O dams which we are offering at reasonable prices, write us.

NELSON BROS.
Richmond Utah

Hatching Eggs 20% Off.

A few White Leghorn Breeders at half January prices.

BATES & SON, GUHAMA FARM
Provo, R. F. D. No. 1, Utah.

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We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

Prices at your post office:
100 Butter Wrappers.....\$.90
200 Butter Wrappers.....1.25
500 Butter Wrappers.....2.00
1,000 Butter Wrappers.....3.00
Check or money order must accompany order.

ANOTHER OF THE SPECIES

Restaurant patron, caustically—"I am glad to see your baby his shut up, madam."

Mother—"Yes, sir. You are the only thing that's pleased him since he saw the animals eat at the zoo."

THE FIRST SHALL BE FIRST

"Won't you dine with me?"

"Thank you, I have dined. I was home and had my regular meal of apples, apricots and asparagus."

"Isn't that a rather odd combination?"

"Yes. But you see my wife went to domestic science school and had to leave after the first week."

ASPARAGUS CULTURE

By R. H. Forbes, Arizona Experimental Station.

Asparagus is resistant to our extreme heat, endures drouth well, and prospers with amounts of alkali in the soil prohibitive to many other crops. So well suited, in fact, is this plant to our environment that it often grows wild. Asparagus may be grown either as a garden crop with rows four or five feet apart, or as a field crop with rows six or more feet apart to admit of more convenient culture with teams.

The Soil and Its Preparation

Rich, sandy loam soil, heavily fertilized with barnyard manure is best for asparagus. The limit of tolerance for alkali is indicated by a barely surviving plant found at Tempe in soil containing .50 per cent sodium chloride, .22 per cent sodium carbonate; the total soluble solids amounting to 1.50 per cent.

In preparing a field for asparagus the ground should be made level for short rows or with a very slight fall (about 2 inches in 100 feet) for longer rows, in order to secure thorough percolation of the water supply to the extensive root systems of the plant. In preparing the rows a good method is to open them out with furrows, two each to right and left, then to place a layer of well-rotted barnyard manure in the bottom of each furrow and cover it with two or three inches of soil. Rows thus prepared should be four or five feet apart in small fields, but can be six or eight feet apart in larger and less intensively cultivated tracts.

Planting

Either seed or roots may be planted in the rows prepared as described, the surface of which should be somewhat below the general level of the field, since it is desirable to have the crowns of the plants at least six inches below the surface in order that the rows may be cultivated in winter without interfering with the crop. Seeds should be planted in hills about eighteen inches apart, well distributed to facilitate thinning the young plants to one in a hill later. Roots should be placed at intervals of about fifteen inches and covered about two inches deep with soil. Thus placed they may be irrigated at first on top of the depressed row, the soil being drawn gradually to the plants as they develop until finally they stand in low ridges irrigated from furrows on either side. Seed may be planted in nursery rows about two feet apart and allowed to grow one year. In planting they should be covered about an inch, and the plants should not be closely crowded in the row. The young roots may then be dug and transplanted as described. One or two-year-old roots give quicker results, but are more costly than seed, which, however, requires at least a year's development before transplanting may be done. Roots, also, will grow in soil too alka-

Duroc Jersey Boars

Boars chuck full of Grand Champion Breeding. Bred the same way as our Utah State Fair Winners. We have a great lot of top spring Boars and are offering them at bargain prices. Every Boar guaranteed to please or money refunded. Write us today.

RICHARDS LIVE STOCK CO.
Virginia Idaho
The West's Best Durocs.

line for seedlings. Although asparagus roots are hardy under shipment, home grown seedling roots are usually fresher and better for transplanting purposes than those imported from a distance. Also, they are not infested with rust, which may be brought in with imported roots.

Culture

Although asparagus endures drouth, its profitable culture requires frequent irrigation, ordinarily not less than twice monthly during the growing season. During the cutting season weekly irrigations are advisable. Each irrigation should be followed by cultivation. The crop should be fertilized each year, immediately after the cutting season is over. This may be accomplished by opening out furrows, right and left, in the spaces between the rows, filling them in with well-rotted barnyard manure and then covering back again. The growing crop will make use of this fertilization through the summer season, when root systems are being stored with materials used in the elaboration of the next crop. At the close of the growing season in the fall, the dead tops should be cut and burned to clear the ground and destroy such rust spores as they may contain.

Crop

A convenient tool for cutting asparagus is a chisel shaped blade about ten inches long, with which the stalks may be cut well below the surface of the soil.

USE OF ROLLER ON THE FARM

Wallsburg, Utah, May 19, 1917.

The Utah Farmer, Lehi, Utah.

Gentlemen: Kindly tell me the uses of a roller on the farm.

I hold that they are no good except for leveling purposes and breaking clods. That ground that is rolled will not hold the moisture as well as if it were not.

I find a great deal of opposition here on the question that to roll ground, such as beet fields just planted, oats, all kinds of grain, etc., does not help to hold the moisture in the soil, but on the contrary makes it dry out quicker.

Am I right or wrong?

Any information you can give me will be greatly appreciated.

Thanking you in advance, I remain, yours truly, D. E. GREER.

Answered by F. S. Harris:

It is a well-known fact that a roller causes a greater loss of water from the soil than if a mulch is maintained. Rolling makes the surface of the land wetter by causing water to rise from below, but when the moisture gets to the surface it is lost. Where water is scarce the use of the roller becomes of doubtful value, except in breaking clods and otherwise leveling the land. Certainly it does not help to conserve water.

A THOROUGH SYSTEM OF CROP ROTATION

By Mark Austin.

Beneficial to the farm and the farmer, and as the season is getting late, we desire once more to earnestly call the attention of the farmers to this very important matter.

A system of crop rotation on a twenty-acre farm may be established as follows: Eight acres of beets, two acres of corn or potatoes, two acres of wheat seeded with alfalfa and eight acres of alfalfa. The two acres planted to corn or potatoes should be on lands where green alfalfa has been plowed under as heretofore outlined, which will furnish excellent rich sugar beet land for three or four years thereafter, by putting on a little manure the last year it is in sugar beets; then the two acres of land that has been in sugar beets the longest may be planted to wheat and alfalfa, and two acres more of the oldest alfalfa plowed under each year for corn and potatoes, to follow with sugar beets for four years. If this plan is followed it will mean four years sugar beets, one

year corn and potatoes, one year wheat seeded with alfalfa and four years cutting of hay. What little manure there is produced upon the farm may be put on the beet land the third or fourth year that it is growing beets.

This system of farming will help to eliminate the weeds, thoroughly enrich the soil to increase its production from 25 to 30 per cent above the average yield at the present time, and make the farmer rich as well as the land.

If a farmer has only ten acres of farm land, then he could plow up one acre of alfalfa each year for corn and potatoes or a proportionate amount in proportion to the size of his farm, let it be great or small. This method, if adopted, will solve the problem of fertilizer, one of the most important things which confronts the American farmer. It will also keep his soil in a good, healthy condition and eliminate plant diseases in the soil.

PLANT BLACK WALNUT

Desirable Tree for the Wood Lot and
Unused Places on the Farm.
Directions for Planting.

Because of the very high lasting qualities of its wood and the moderately rapid rate of growth of the tree in good locations, black walnut is one of the few most desirable trees to plant on the farm. Small patches of rough, gullied or unused land about the farm and narrow strips along fence rows and highways or corners of barnyards and stock lots make ideal places for planting this valuable tree. The method is simple, and the present heavy crop of nuts make this year a most favorable time to begin work along this line.

The black walnut tree is comparatively free from insect attack, particularly the wood. The price of black walnut lumber in recent years has been consistently high. Another factor to be considered is the rapidly diminishing supply of walnut trees over practically its entire range in the United States, due to recent cutting in order to meet the demand for gun-stock material. The tree yields durable wood which may be used for posts and for a wide variety of purposes about the farm, in case it is not sold in the lumber market.

In order to succeed well, walnut requires a rather good grade of soil, hence no attempt should be made to plant it on poor, thin soil or on hot, dry exposures. Favorable situations for rapid development are on strong limestone soils, deep alluvial soils, and stony loam soils along the margins of highlands. Since the walnut tree requires a large amount of light, it may successfully be planted on open tracts recently cleared of old growth and on recently abandoned fields. In this respect it resembles black locust, which, however, grows faster, but in many localities is more or less subject to serious attack by a wood-boring beetle.

The walnut crop was particularly heavy this year, affording a splendid opportunity to gather or buy seed for planting. Nuts should be stored over winter and planted the following spring. They are best stored in pits dug in the ground, the bottom of the pit being covered with leaf litter or straw, on which a 3-inch layer of nuts is placed, then a layer of litter, and so on, covering the whole with soil so as to leave the surface a few inches higher than the general level. Planting should be done about the time germination begins. Squirrels, chipmunks, and hogs are serious pests if present in numbers and would more than likely succeed in making away with a majority of the nuts if they are planted in the fall. Small tracts, however, surrounded by cultivated fields and other places where these animals are known to be scarce might safely be planted in the early or late winter when labor is more accessible than in the spring.

To plant the nuts, make a small hole with a mattock or hoe, drop one or

two nuts in each hole and cover them with about 2 inches of fresh, firmly packed soil. For the larger areas, a good spacing in forest plantations is to dig the holes 8 feet apart each way or 8 by 10 feet, which amount to 680 and 545 holes per acre for the two spacings. For small areas, or along fence rows and highways, the spacing should be about 8 feet in the row, unless permanent shade is desired, in which case the distance should be 20 feet during the early period of growth and subsequently increased to 40 feet by removing the alternate trees. For purposes of nut production the trees should be spaced at distances of from 40 to 60 feet apart, and should be given a due amount of cultivation.

The number of nuts required can easily be found by knowing approximately their quality, the area of ground to be treated, and the spacing. Care should be taken not to plant under shade. Where the trees in the old wood lot are to be cut during the next year or two and are moderately open, planting might begin now, so as to get a start in advance of the removal later of the overhead protection against early frosts and excessive drying of the soil in midsummer.

While the best results are usually obtained by completely preparing the soil and cultivating it for a few years after planting, farm owners should be aware of the possibility of starting hundreds of young walnuts in their wood lots and elsewhere at the expense of only a little labor. This will be a good step in the process of securing useful and money-making trees on parts of the farm which would perhaps otherwise be waste land, making no return at all to its owner for its cost in care and taxes.

PHILOSOPHY

The signs is bad when folks commence
A-finding fault with Providence
And balkin' cause the earth don't shake
At every prancin' step they take.
No man is great till he can see
How less than little he can be
If stripped of self, and stark and bare
He hung his sign out anywhere.
My doctern is to lay aside
Contentions and be satisfied.
Jest do your best, and praise er blame
That follows, that counts jest the same.
I've allus noticed great success
Is mixed with trouble more or less;
And it's the man who does the best
That gets more kicks than all the rest.
—James Whitcomb Riley.

THIS MEANS US, TOO

"If the American people would consent to nourish themselves scientifically and economically—for the terms are almost synonymous—they could generously feed every starving person at home and in Europe without contributing a cent over what they would save from this proper economy in nutrition."
—Harvey W. Wiley, M. D.

The man who keeps on until he gets what he goes after is a wonder; so many start out after the bacon and come back with the rinds.

Are You A Fit or Misfit?

Are you planning to push a pen when you are better fitted to work in the sunshine planting corn?

Are you shoveling coal when you ought to be inventing machinery?

Are you working on the farm when you could do better selling goods?

Many fail because they are not doing the kind of work for which
s class?

These problems should be solved. You should find yourself. Read Dr. F. S. Harris' new book,

The Young Man and His Vocation

It is brim full of practical ideas and suggestions for every young man.

It will help you understand yourself better; your possibilities, your limitations.

Modern life are explained and the reader is shown how he can meet these demands. The opportunities and requirements in each kind of work are discussed in such a way that the young man is materially aided in selecting his life's work and in preparing himself for it.

It will help you choose a suitable vocation, and get the most out of life.

Order one of these books for yourself or boy.

Send \$1.25 Today to

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH

VOLUME XII, NO. 45

JUNE 16, 1917



Photo by Benson
Musgrave

Some people believe in silos. Nearly every man who builds a silo adds another as soon as possible. The best way to help the hay situation is to build a silo and fill it with corn or some other ensilage.

SUGAR BEETS

GROWING SUGAR BEETS FOR PROFIT

By J. C. Wheelon.
Green Manuring

Agriculture is, of all industrial pursuits, the richest in facts, and the poorest in their comprehension. Facts are like grains of sand which are moved by the wind, but principles are these same grains cemented into rocks.—Liebig.

Cyril G. Hopkins of the Experiment Station at Urbana, Illinois, in his address to the farmers' institute at Sterling, Illinois, quoted the above from Liebig, and among other things said:

"The main problem of permanent fertility is in making sure that every essential element of plant food is continually provided to meet the needs of maximum crops; and any elements which are not so provided by Nature must be provided by man. The rational system makes use of abundant quantities of all essentials, but at a cost low enough to be within reasonable reach."

In the main, soil to be productive must contain an abundance of humus, nitrogen, phosphoric acid, potash and lime.

It is safe to say that in most of our inter-mountain valleys, the sage brush soils contain as much phosphoric acid, potash and lime as the virgin soils in the Mississippi and Ohio valleys ever contained. So that the problem of permanent soil fertility that is presented to the inter-mountain farmer is that of supplying an abundance of humus and nitrogen, in which our soils were extremely deficient in their sage brush state and will continue to be deficient until the farmer supplies them; and, fortunately, our lands will grow the material itself to supply these two elements in abundance and by proper farm practice and skillful rotation of crops they can be supplied at an expense that can be neglected in the schedule of costs.

It is a quarter of a century ago that Hellriegel of Germany discovered that bacteria living in symbiotic relationship with legume plants have power to gather nitrogen from the inexhaustible supply contained in the atmosphere.

Every landowner ought to be as well acquainted with these three elements as he is with his three nearest neighbors, and the supplying of these elements to his soil should be a matter of as much concern to him as that of supplying flour, meat and vegetables to his family table.

Green Manuring

Green manuring means the use of green vegetable matter mixed with the soil for fertilizing purposes, and results in the most positive as well as the surest and most prompt nitrification of plant foods for crops.

Growing Plants

Dry manure, straw and other dry matter mixed with the soil will supply humus and nitrogen, but the lack of bacteria in these dry materials renders the action of decomposition very slow, with the mixing of growing plants with the soil, however, the conditions for the rapid increase of soil organisms are most favorable, and the decomposition of the vegetable matter is very complete.

Legumes

The remarkable power possessed by alfalfa, clover, peas, beans, etc., for fixing nitrogen in the soil renders these crops especially valuable as green manure as they furnish the three elements so much desired at one stroke—the humus, nitrogen and the bacteria.

Sugar Beet Growing in Rotation

As sugar beets are admittedly the best paying crop grown in the inter-mountain regions, and as there is no crop that responds so promptly to

high soil power, the progressive farmer is naturally desirous of getting his land as rich as possible, with as little delay as possible, and with as little cost as possible. To avoid delay caused by summer fallowing he must rotate his crops. In rotation of crops he must not exhaust his soil in preparing for beets.

Mark Austin has shown in his article on rotating with silage corn the remarkable soil power obtained by plowing under alfalfa in the late spring and growing corn for the silo. This is done with profitable results in beet growing, and without loss of a season in which to prepare the ground, with no expense for fertilizer, with a splendid crop of corn and with practically no soil exhaustion while the soil power was increased 50 per cent, and all this accomplished with just good farm practice.

By letting the alfalfa grow in the spring until a heavy succulent crop of green foliage is on, we can capture in this foliage the stored up nitrogen it has obtained from the air. In plowing this under we capture also the nitrogen that has for years been fixing in the roots and crowns of the plants. The temperature and moisture conditions of the soil at this time are most favorable to the multiplying processes of the soil organisms and the progress in converting these nitrogenous elements into plant foods is ideal. Corn is considered a very light feeder upon soil elements and is not exhaustive to the soil. As much or more feeding value is obtained in the corn whether siloed or cured dry as could be obtained from three or four cuttings of hay and the soil power of the field has been increased by half to double its former capacity. The cultivating that is necessary to grow the corn keeps down the live crowns, and keeps the coarse roots and crowns stirred into the soil as they become rotted and an ideal seedbed is prepared that will produce three or four straight crops of sugar beets that will yield from two to four tons more per acre per year than the field ever produced before.

Beet Tops

In the tops and crowns of sugar beets plowed under green (before they have wilted or cured) we have one of the best and cheapest green manures known to agriculture. These crowns and leaves contain two-thirds of the nitrogen in the entire plant, supply to the soil a vast amount of humus, and inoculate the soil with the proper family of bacteria required for the following beet crops.

After Growth

If barley or oat stubble is irrigated after the crop is harvested a very heavy growth of young grain and suckers will make a splendid green manure to plow in before frost catches it. If alfalfa is sown with the grain in the spring so much the better, and even if the stubble is planned to be plowed for rotation in potatoes, corn, beets or other grain, the young alfalfa will be a splendid investment.

May 31, 1917.

SOME SUGGESTIONS ON THINNING AND CULTIVATION OF SUGAR BEETS

June 15 was the first day that the thermometer registered 90 degrees, and that for a very brief time, about 2 o'clock. Most days the register has been around 80 or lower. This accounts for the cut worms which have done considerable damage to beet fields. Two or three 90 degree days will put a stop to cut worms. Brown-ing off at the roots of the young beet plants, commonly known as "damping off" (Phoma Betae), is nearly always bothersome under conditions that allow the cut worm to thrive. The writer just came from a field that was badly bothered with "damping off."

Plant That Vacant Ground

It is no less than criminal to allow good soil to remain idle this year.

You can yet plant successfully Beets, Mangels, Rutabagas, Turnips, Beans, Corn, Rape and Millet. Seed order filled immediately for above.

PORTER-WALTON CO.
Salt Lake

The grower was in a quandry to account for the trouble. It was an alfalfa field until last year, when it yielded a fine crop of wheat, and this year it was seeded to beets. A careful examination of the premises showed clearly that the field had not been worked down firm this spring and the drill ran deeper than the driver realized. Where the soil was heavy or at the headlands where the tramping by the horses had made the soil firm, the drill did not go down so deep, the beets came up more quickly, there was but little "damping off," the beets had a good color, but on the softer soil the beets had a hard time getting to the surface. The weather was cold, the soil was damp and this fungous growth attacked the small plants. Today we found that following the cultivation, more than one-half of the small plants began to outgrow the fungous attack and were setting fresh rootlets, generally. However, probably 15 per cent of the plants will perish. We advised the grower to cultivate again and again. The soil needed warming up to ward off both the cut worms and to aid the small plants to grow. Block the rows out, but not to thin for a few days. If thinning is done at once, with the average help available for thinning this spring, many of the sick plants that are sure to die will be the ones left. Blocking stirs the soil, cultivates the clump of plants and soon the plants that are recovering will be readily distinguished from the sick ones by their brighter green color and then it will be entirely possible to leave a perfect stand of vigorous plants.

A good deal of bother, did you say? Perhaps, but it will pay handsomely. In this field the physical condition of the soil should produce a yield of not less than twenty tons of beets per acre. Indifference just at this time and improper thinning can easily reduce the yield 10 per cent, or two tons per acre, which will be worth \$7 per ton, or a difference of \$14 per acre.

Then there is the satisfaction of accomplishing the worth while.

On another field, sandy soil, fertile, a good stand of beets, which ought to have been thinned more than a week ago. The grower cultivated, using the rolling disc, which left a little ridge in which the beets and weeds were growing. This little rolling disc is a splendid tool to use just ahead of the thinners, but unless the thinning is to immediately follow the cultivator, this exposed ridge will quickly dry out as was the case here, due to the little furrow being thrown away from both sides of the beet row. The beets and even the weeds were wilting at 2 o'clock because the ridge had dried out so badly. Better use the narrow shovels or the sweeps for the early cultivating and use the rolling disc only just ahead of the thinners. Then the fresh soil works splendidly. It is observed that under these conditions the beet plant is usually left lopped over in the hot sun. The following morning the little plant has its head up, but it is standing in something of a furrow. With extremely few exceptions, it is a splendid plan to immediately follow the thinners with a field roller which firms down the ridge between the rows and the firming of the soil aids in establishing better capillarity,

which means bringing moisture from below to the surface. With but very little delay, follow with the cultivator. If a firmly rolled surface is left very long, the moisture will come to the surface, evaporate and this dissipate moisture that is extremely valuable. However, there are many growers who do not have a field roller. The field roller is a very good tool if intelligently used, but must not be used indiscriminately. In any event, keep the cultivator not far ahead, and also not behind the thinners.

The two or three first times through the beets with the cultivator means much in dollars and cents. This spring with help shortage there is an uncommon lot of hit-and-miss cultivating.

I walked through a grower's field while he was showing me a good stand of beets, just ready for thinning. He apologized for being in a hurry, which allowed the cultivator to knock out seven to nine-foot gaps here and there. As we walked along, I clicked a silver quarter in my pocket when we came to each of those gaps. A half hour in the field showed that he had chopped out enough gaps for the silver quarters to well nigh fill a good sized pocket. He had not taken time to follow back over his field while he was at work and discover what a lame job of cultivating that he had been doing. He thought that it would not have been so bad with a four-row cultivator, and I think that he would have been more efficient with a four-row cultivator. They are heavier, more rigid and move more steadily, and then, too, with the foot guide, the shovels are more readily handled. Where the surface is badly leveled, the two-row cultivators work better. On most fields four-row will do a better job and the cost of cultivating will be much less; the field is gotten over much more quickly and when ditching out for irrigating, especially where there is but little slope to the field, the irrigating furrow will be more uniform and the water will flow more satisfactorily.

Practically every community has something of a labor organization. Get the beets thinned! Even if it is not a first-class job, get over them in the very best possible manner, then cultivate quickly and follow as soon as you can get to it with the first hoeing and pull out the "doubles" that were left.

QUESTION AND ANSWER

Land, Utah.
To The Utah Farmer, Lehi, Utah.
Gentlemen: Will you please tell us how to best take care of frosted alfalfa? Our hay this year was up about six or eight inches and the tips were all frozen. Should we have cut it at once? Please tell us what you would have done under conditions of this kind. J.R.

Answered by R. S. Harris:

It is usually considered better to cut alfalfa that is badly frosted at once; but probably more important than cutting is a good supply of soil moisture so that the alfalfa will send up new shoots at once. If the land is at all dry, it should be irrigated as soon as possible after being frosted.

To prevent eggs from popping and spattering grease while frying, add a bit of flour to the grease before dropping in the eggs.

PLAN NOW TO BUILD A SILO

By Alex Lofgren.

Many of our Utah farmers have been feeding ensilage this winter for the first time. From what I have heard the most of them have been very successful, because they have been careful. There is no question that their feed bill has been reduced, their cows and livestock have done better than ever before. The best results have come where the ration has been carefully studied out and the proper amount of alfalfa or other roughage fed along with the ensilage. I have one case in mind where the best results did not follow. It was his first experience and he overdid it. The most serious mistake was, he fed it practically alone, instead of with other feed.

We had a little experience before we came to Utah with a silo. Nothing but good has ever come from it after several year's use. We feed ensilage to everything on the farm from the chickens, lambs and pigs to the horses and cows, but we were always careful to balance it with other feed. Start to feeding it light at first and gradually increase the amount as the stock becomes

accustomed to it, even then it should be fed according to the size and age of the stock.

Another mistake I have noticed is, some of our farmers build too large a silo for their use. Ordinarily there must be fed off each day enough to keep it fresh, and if the diameter is too great to do this, there will be some waste from spoiling. Build just as large a silo as you can profitably use, but not any larger than you have livestock to feed the ensilage to.

Ensilage is one of our very best and cheapest feeds. It must, however, be fed with other feeds to get the best results, such as alfalfa and other hay.

The extravagance of using large quantities of grain in feeding livestock is being pressed home in these days of high prices for foodstuffs of all kinds. Grain is necessary in feeding livestock, but as a result of the days when grains of all kinds were cheap, we formed a habit of feeding a great deal more than is absolutely necessary.

In the interests of economic production we should convert into human food our hay, fodder

and other coarse feed. There is a world-wide demand for grains of all kinds for human food, and in view of this condition we cannot afford to use more grain than is absolutely necessary in growing meat animals and finishing them for market.

The silo is the one way to store the food for these animals, and right now is the time to plan so we can make the most of what we produce.

An insistent demand for greater supplies of human food is coming from all over the world. A conservation of all that is produced by the soil requires that the full value of the forage part of the crop be converted into such form as will make it available for human food. Storing this material in silos will accomplish this result more completely and effectively than any other method of harvesting and preserving forage crops. By putting up silos and preserving the corn, kaffir, peas, oats and cane as silage, the maximum value of the crop will be saved. In feeding this silage

(Continued on Page 11)

Preparedness In Permanent Highway Construction

Roads rule the world—not kings nor congresses, nor courts, nor ships nor soldiers. The road is the only royal line in a democracy, the only legislature that never changes, the only court that never sleeps, the only army that never quits, the first aid to the redemption of any nation, the exodus from stagnation in any society, the call from savagery in any tribe, the high priest of prosperity, after the order of Malchisedec, without beginning of days or end of life. The road is umpire in every war, and when the new map is made, it simply pushes on its great campaign of help, hope, brotherhood, efficiency and peace.

—Author unknown.



Concrete Roads Have Helped Many Towns and Cities to Progress More Rapidly.

farmer from twice to five times as much to move his tonnage from the farm to the railroad siding, a distance of five or ten miles, as the railroads charged to move the same tonnage 100 miles. The public was taking keen interest in this matter of transportation economics, because the public had to pay. The public always pays.

Something had to be done, some corresponding improvement had to be made; and so it was that man invented the automobile, in order that the minutes between milestones could be cut and quartered; and then the motor truck, which could haul a load of five, ten or even fifteen tons, instead of one or two with the horse.

The introduction of this new mode of travel marked another rapid stride in the advance of civilization. A new and serious problem presented itself, for man no sooner began the use of these new contraptions than he learned to his dismay that his highways, which were designed for the horse-drawn vehicles, could no more stand up under, or survive, the effects of these new conditions of traffic, than could the roadbeds, rails, ties and bridges, under railroad traffic conditions of the days of Abraham Lincoln stand up under or survive the effects of traffic conditions as they are today.

After careful thought and investigation on the part of our best highway experts, the following conclusion was arrived at: The lasting quality of a macadam road depends greatly upon the natural cementing value of the stones composing it. Until the advent of the automobile and the motor truck, the binding material of the surface was disturbed by the horses' shoes and blown away by the wind; more binder was then chipped off the stones, compressed by the steel-tired vehicles, and reformed by absorbing moisture from the atmosphere. The automobile prevents this remaking of the binder. The

(Continued on Page 10)

DAIRYING

SAVE THE DAIRY COW By Oscar Erf.

In our national preparedness for the impending food crisis it is just as essential that provision be made for an adequate supply of milk, butter and cheese as for a supply of breadstuffs. It is, therefore, very necessary that the source of milk supply, the dairy cow, be preserved.

As the price of beef advances the tendency is to utilize the dairy cattle for meat. Our earnest protest is that dairy cattle should not be slaughtered promiscuously, for there is no other animal that can convert the rough feeds into such nourishing and necessary foods and do it so economically.

No food has taken such an important part in the development and growth of mankind as milk. Sufficient evidence to prove this statement lies in the fact that the mortality of children under 2 years of age has exceeded 90 per cent in all of the countries engaged in the present war, with the exception of England, which has been constantly supplied with condensed milk by the United States. Statistics gathered by the Red Cross show that in Serbia today the mortality of infants is so great that there are practically no children under the age of 2 years.

The future of our country depends upon the children of today and no food can take the place of milk in the nourishment of the child. This is sufficient evidence that such an important industry as dairying should have immediate consideration. One of the large distributors of food products to the allies, in Rotterdam, Holland, states that no food has added more to the strength and endurance of the soldiers in the trenches than condensed milk.

Mr. Munn, president of the National Dairy Council, makes this statement: "Our people should bear in mind

the significance of the heartrending appeal made to the German reichstag by Field Marshal von Hindenburg. He cries for fat, fat, fat, fat for his soldiers and fat for the weakened people."

Mr. Munn contends that the fate of Germany hangs upon their being able to obtain fat and since butterfat contains the material which promotes growth to a much greater degree than any other fat, and since the dairy cow produces during her lifetime the same amount of human food as seventeen steers, provision should be made for the conservation of the dairy cow in our scheme of preparedness.

Cheese is one of the cheapest sources of energy giving protein and is very essential in the rations of the soldiers. The cow produces on an average enough milk in one year to make 600 to 700 pounds of cheese, which is equivalent in food value to 1,800 to 2,220 pounds of meat. If the cow is slaughtered she will furnish not more than 325 and more likely less than 250 pounds of edible meat after the waste has been deducted.

Meat from one cow will supply a sufficient amount of beef in a ration for two soldiers for a year; while milk from one cow of good average production will supply an equivalent food value for twenty soldiers for one year.

In addition to this, the cow produces a calf for the future propagation of the production of milk. When she is slaughtered for meat her existence ends, but if used for milk production she will duplicate her work the following year. This alone is sufficient evidence of the supreme necessity for preserving this valuable animal.

Moreover, the dairy cow has another asset, in that she consumes rough feed and produces the best human food. She also produces manure which increases soil fertility and makes crop production more abundant and more profitable. Without the addition of such fertility our production would be seriously impaired in a few years. The preservation of the dairy cow and the dairy heifer is most essential, and if the nation does not preserve this source of our food supply it will soon find itself in distress.

It should be the duty of the state and the nation to immediately take steps to maintain and stimulate dairy production in the following ways:

First, by the prohibition of the sale of productive and profitable dairy cows and dairy heifers from good producing cows.

Second, by the use of selected and efficient sires in the propagation of herds, since there are sires whose daughters have produced 550,000 pounds more butterfat during their lives than the daughters of the average bull.

Third, by an extensive campaign to educate the farmers so that they will increase rather than decrease the number of efficient dairy cattle in their herds.

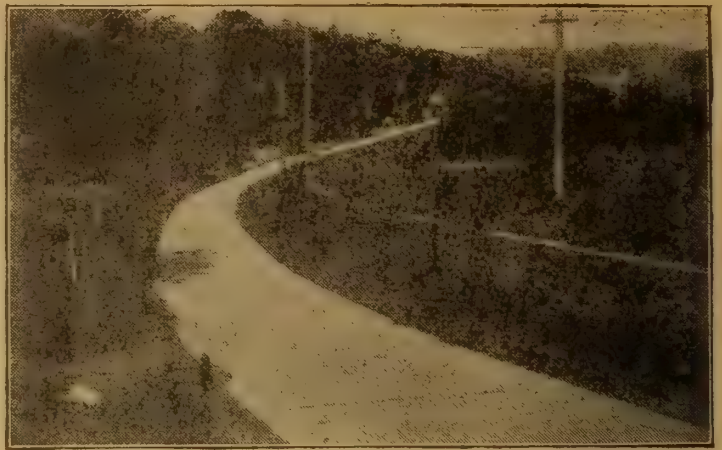
Fourth, by arranging for some method by which the dairyman will receive proper remuneration for his products, so there will be an incentive for him to remain in the business.

Fifth, by educating the consuming public to the food value and the relative economy or the use of milk and its products to assist in the economy of food in our present crisis.

RAISING DAIRY CALVES

By R. W. Latta.

It is generally acknowledged by dairymen that the only safe way to maintain and improve the herd is to use a bull that will increase the standard of production, and to raise the heifer calves. However, some raise these calves more economically and with better success than others. It is not economical to let the cow raise the calf, and moreover this practice



Stretch of Concrete on the Ohio River Road near Parkersburg, W. Va.
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FARMERS know the value of permanent roads in their communities. They can get them if they act along the following definite lines:

1. All main highways should be built of concrete to withstand motor car traffic..

2. It is far better to lay out and build at once a system of concrete roads than to build a few scattered miles every year between stretches of mud.

3. It is better to raise a lot of money by a good roads bond issue and build right, than to spend each year the road funds on hand in temporary construction.

4. Concrete is as desirable for roads as for other important structures; and it is the least expensive permanent road material.

Some farmers may not like a bond issue. They do not realize

that a very few cents a year per acre is enough to pay off the bonds and all interest.

In Illinois it has been figured out by the State Highway Commissioners that a system of four thousand miles of permanent roads would tax farm land less than three cents per acre per year for twenty years. That's nothing. The whole four thousand miles can be built at once and make a tremendous saving in annual upkeep.

The farmer should act. He can spread information among his neighbors, he can talk to his road officials, influence his lawmakers to pass a good roads bond issue; and he can vote for it.

This Association can give you reliable information about the cost of building concrete roads and how to go about it. Write for Bulletin No. 136.

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reduces the production of the cow. After the cow's udder has returned to normal, the calf should be separated from its mother and fed by hand.

The following rules should be observed:

Feed regularly.

Have the milk fresh and warm; always the same temperature.

Do not feed more than two quarts at a feed during the first three weeks.

All utensils must be scrupulously clean.

Give the calves a little bright, clean hay, and some ground grain, after they are a few days old; only what they will clean up readily.

At ten to fifteen days, commence substituting skim milk for whole milk—in slowly increasing amounts.

Never feed skim milk from the separator with the foam on it.

Feed the grain dry. At first a little may be put in the milk, but the calf will derive more good from it if eaten dry.

Feed each calf separately and leave them tied up after drinking their milk for some time. Do not allow them to suck each other's ears and navels.

Give two or three teaspoons of castor oil in the milk at the first signs of scouring.

As a general preventive of scouring, it is a good practice to feed, at all times, a little dried blood meal in the milk—about a teaspoon to three quarts.

Skim milk, if plentiful, should be fed

to the calves up to six or eight months of age, or even a year; never more than 8 or 10 pounds to a feed. Where the milk is needed for the market, or other uses, water and calf meal may be gradually substituted for the skim milk. Calves do better when they get some milk, but many are raised successfully with no milk at all after they are seven or eight weeks old.

DAIRY PREPAREDNESS

The following information and suggestions relative to the place of the dairy cow in increasing the food supply of the nation has been sent out by Prof. J. H. Frandsen.

1. A world food shortage threatens us, and every dairyman must do his bit to increase the food supply.

2. More dairying is desirable. It is a well established fact that the dairy cow produces human food more economically than any other animal on the farm. The dairy cow feeds largely on roughage and by-products which cannot well be used for human food.

3. Children must have milk. Countless thousands of Europeans are suffering from lack of nutritious food, such as milk, butter and cheese, which are among our most perfect foods.

4. Increase our meat supply. The meat supply of the nation can be most economically increased by raising the surplus dairy calves to the baby beef stage.

5. Keep more cows. Practically

every farmer can care for a few more good cows. Many city boys and girls could care for one or two cows on grass now going to waste on vacant lots and roadways.

6. Helps for labor problem. Men, boys and girls not otherwise employed should volunteer for service on dairy farms. Milking machines and other labor-saving devices will reduce the drudgery and help solve the labor problem.

7. Milk the cow and feed the calf. On general stock farms milk and butterfat could be saved for human food by raising calves on skimmed milk, grains, by-products and alfalfa.

8. Make the dairy herd efficient. Weed out the poor producer; use a pure-bred sire; save all calves from the best producing cows.

9. Prepare now for winter dairying. It gives higher production, better prices, cheaper labor and lowers the cost of production.

10. Watch the pasture. If it gets too short, supplement it with soiling crops or summer silage. For soiling crops, plant corn, oats, sorghum, Sudan grass and alfalfa.

11. Home-grown feeds are cheapest. Provide plenty of alfalfa and corn silage for the dairy herd.

12. Provide more silos. As insurance against drouth and to release high priced grain for human food, add one more well filled silo to the dairy equipment.

13. Value of dairy products. Remember, one quart of milk equals in food value any of the following articles: Eight eggs, 2 pounds of chicken, 3 pounds of oysters, .79 of a pound of sirloin steak, 5½ pounds of tomatoes and 5½ pounds of cabbage.

14. Use more skimmed milk for food. Skimmed milk may be utilized for cottage cheese, Neuchatel cheese and other forms of cheese, soft or hard, for milk soups, mushes and puddings, all of which may take the place of meat in the family diet.

15. Use all surplus skimmed milk for feed. All skimmed milk and buttermilk not needed for human food should be used for raising calves, pigs and poultry.

16. Make the most of the dairy cow and her product. Give her sufficient care and feed for best results and handle her products in the most sanitary way necessary for production of the best human food.

SILAGE IN OUR FEEDING RATION

By R. H. Williams

Silos are an index of progress in the United States where there is successful farming. Where there are large numbers of silos and the feed stored in them is given intelligently to livestock, the district is usually prosperous. There are millions of acres where silage may be grown and used to advantage. These districts and systems of farming may be classified as follows: (1) Irrigated farms to supplement alfalfa hay and grain for feeding cattle and sheep; (2) dry farms to store sufficient palatable food for supplementing short pasture to tide over drouth and feeding cattle and

sheep; (3) range, cattle and sheep production, to grow silage on overflow, irrigated or dry farming land and to use same to feed stock to tide them over short range.

Intelligence and experience are necessary to secure proper returns from feeding silage. Wherever corn silage has been used for the first time there is a tendency to regard it too highly. Silage made from corn or sorghums makes a splendid food for livestock, but for maximum gains it should be fed along with other constituents rich in protein and of more concentrated nature. One should not expect good results from feeding animals on silage alone. This is due to the unbalanced nature of silage for it is too bulky and also deficient in protein. It is very similar to corn fodder, for silage is just the canned green fodder and not quite as good as the green food.

When feeding silage alone its desirable qualities such as improving the appetite regulating the bowels, making the animals more vigorous and giving them a pliable hide and a glossy coat, are not as apparent when fed along with other foods which will properly balance it. Corn silage is worth about one-third as much for feed as alfalfa hay. Ordinarily its value would range from \$3 to \$7 per ton and this corresponds with alfalfa hay at \$9 to \$21 per ton. It is not fair, however, to estimate the value of silage as you would alfalfa hay when used as a separate food due to the fact that alfalfa hay is a fairly well balanced food and silage is not. One might obtain greater results from feeding a small quantity of silage than where large quantities are fed so that it is probable if ten to fifteen pounds of silage are added to a ration its value may be in excess of the above figures.

Silage almost invariably provides a cheaper succulence than roots. It contains about twice as much dry matter and on this account has a higher feeding value. A ton of roots would, therefore, be worth about one-half as much as a ton of silage or \$1.50 to \$3.50 per ton or one-sixth as much as alfalfa hay. Where very small quantities of roots, say 10 to 12 pounds, are fed a steer daily, it is possible that the roots have almost as great feeding qualities as the silage.

This same point is observed regarding the silage. It is due to the fact that succulent foods have a value in excess of their nutrients due to their special palatability and regulative qualities. On this account if one is paying high prices for silage or roots they could be fed in small amounts, but either one or the other should be found in every well-balanced ration for cattle and sheep.

HOW TO FEED THE DAIRY HERD

By W. H. Underwood.

In a manufacturing plant each machine turns out as much of the finished product as it is capable of turning out, and to do this it must have the required raw material in proportion. The dairy cow is in a sense a machine and to a very great degree her output depends upon her feed.

But there is another way of looking at it. The amount of feed which may be profitably given the cow depends largely upon her production. The quantity of food should naturally be regulated according to the yield of milk. A cow giving sixty pounds of milk daily requires more feed than one giving twenty pounds per day. Like the machine there is a limit to profitable consumption with the cow.

If a cow gives three times as much milk as another on the same amount of feed and the cow giving the larger quantity is fed enough to maintain the animal body without loss, the cow giving the lesser amount must make poor use of her food, must waste much of it in digestion and must be an unprofitable animal to keep in the dairy.

Where all cows are fed alike some of the animals must get an insufficient quantity, others must be overfed and very few in the herd receive the right amount for best results.

Cows, then, should be fed individ-

ually. That is, food should be given each cow proportionate to the amount of milk produced.

In large herds it is not an easy matter to feed each cow a different amount according to the amount of milk given, but this may be approximated by dividing the herd into groups, each individual in a group giving nearly the same amount of milk. It is comparatively easy to group the cows with respect to production and thus with respect to feed.

Feeding should also be done with a view to the quality as well as to the quantity of the finished product. Dirty mangers or feeding troughs, musty and strong scented food have a bad effect upon the milk and butter, and too much care cannot be taken to eliminate all such conditions from the feeding of dairy cows.

Success with the herd depends largely upon the success of each individual going to make up the herd, and the success of the individual depends on the feed and care given—such feed and care to be regulated to suit the individual and not a general average for the entire herd. These factors ought to be given greater attention by dairymen.

PRODUCING PURE MILK

Every cow in the herd should be in good physical condition.

Nothing should be permitted in the stable or field that is adverse to the comfort of the cow.

The moment a cow is sick or ailing she should be taken away to a place by herself.

Stables should be light and well ventilated.

High ground should be chosen if possible for stabling.

All food given should be of the best quality possible. Any musty smells about the stables must be done away with.

The water given should be pure and in good supply.

Before the work of milking is commenced, every cow should be very carefully wiped off with a good, clean soft cloth.

No dust or cobwebs should be permitted on the walls, either overhead or at the sides, of the stables where milking is done.

Manure heaps must not be allowed near the barn. Any heaps of decaying matter must be taken away.

Floors should be dampened before milking to lay any dust that may be floating about in the air.

In the pails or cans used the material should be of a kind that will not absorb odors or liquids.

These utensils must be kept absolutely clean. No soap ought to be used in cleansing. Every vessel should be scalded after being used. Sunshine is a good disinfectant.

It is not enough to use effort in washing milk things. The water itself must be perfectly pure. Much water is far from pure. Drilled wells or dug wells and streams properly protected will usually afford good water.

Dust must not be permitted to settle on the inside of any vessel. Great danger comes from dust.

Pails with small openings at the top are in great favor.

No man, woman or child who is a "carrier" of any contagious disease ever should be assigned to work anywhere about a dairy.

The milker's clothes ought to be clean. Grave disease may come from filthy trousers.

No milker should sit down to his task without washing his hands clean. No noise or other disturbing thing should be allowed about the stable at milking time.

Milk should be cooled at once after drawing.

The room in which milk and cream are stored should be perfectly kept and ventilated.

While on the way to market or while waiting for home make-up, milk and cream should be protected from every bad smell.—Pacific Homestead.



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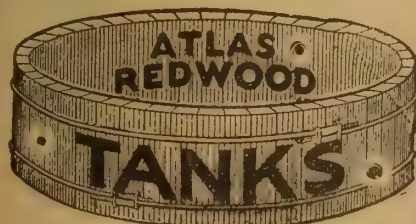
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corn, beans, tomatoes, cabbage. It will help the
food supply.

Look to your tools. Keep them in good condi-
tion. Keep them sharp. Man power, horse and
tractor power are more efficient when working
with good tools.

WHAT THE AUTO IS DOING

The automobile is bringing about a great many
changes in our country life. Many farmers drive
their auto and it is a quick way of getting
around, to and from the farm. Supplies and extras
do not hold up the work when the auto can be
used.

The farmer, or his family, does not have to stay
at home now. He takes his family and they go
to church, visit neighbors, and are able to attend
conventions or entertainments or anything that
will help to make life better and richer.

The young people are much more willing to
stay on the farm where there is an auto. If used
with care it provides a feature of farm life that
young people enjoy.

The automobile demands good roads and all
general traffic is benefited.

It brings the market much closer to the farm.
The eggs, milk, butter and many other products,
with the aid of the auto, is put on the market
daily or as often as is necessary.

The auto is not only a pleasure car, but it is
a time and labor-saver on the farm.

KNOW YOUR OWN FARM.

A great deal of advice and information is being
given out for the farmer these days, but after all
every farmer must know enough about his own
farm in order to apply any of these suggestions.
He must know his soil, because what will prove
good for one kind, will work an injury to another.

Do you know why you get an extra good harvest
this year and a partial failure the next? Do you

know the amount of water to apply and when
you are putting too much on your ground?

Some soils need one kind of treatment, others
would raise no crops at all if same methods were
used. When to cultivate and kind of cultivation
is important and you must know your farm if
you get the best results in this kind of work.

Amount of water, the time to irrigate and when
you should not irrigate, are other features of
farming you must know, if you get the best re-
turns from your farm.

One must make a careful study of his own
farm and know enough about it to apply or put
in use suggestions that may be offered. Each
farm is a problem of itself. Learn yours and
success will follow.

CULTIVATION WILL HELP

Cultivation is the one big thing that is going to
help increase our harvest this year. Cultivation
means larger crops.

Shallow cultivation is all that is necessary if
you had a good seedbed. This will kill the young
weeds as they start and prevent the formation
of a crust, thus keeping the moisture in the soil.

Cultivation at the right time after a rainstorm
or irrigation is helpful. The working of the soil
will add bushels to the harvest in the fall.

Cultivation permits the air to get down to the
roots, and then they go deeper, assuring a better
growth. Cultivation not only kills the weeds, our
greatest pest, but helps to overcome other crop
diseases and insects. The importance of culti-
vating potatoes, corn, beets and other crops can-
not be emphasized too much. It means better
and larger crops and more money for you.

DRAINAGE

It is hard to understand why some people will
not drain their farm. Now is the best time pos-
sible for a drainage project. You may ask why.
The price of farm products is high and in many
cases the land would pay back the cost the next
year at present prices.

Again, why have a farm that is producing only
a half crop? The plowing, planting and most
of the work is no more for half a crop than a
big crop. You cannot produce the right kind
of crops if land needs draining; in fact, much
land is practically worthless until it is drained.

Take advantage of the high prices of farm
crops and drain your land. Prices next year will
not be very low, war or no war.

We have thousands of acres of land that has
become water logged, some of it was once our
best land. This all should be drained.

The cost is small and the returns so sure that
all land that needs draining should be done this
summer.

PROFITABLE DAIRYING

The way to make dairying profitable is to know
the cost of doing it. One man who is making a
study of dairying in Utah said that one-third of
the cows are losing money for their owners. If
this is true, there should be an awakening among
those who own and milk cows. There is profit
in feeding and caring for the right kind of cows.
On the other hand, there is a loss in spending
time and feeding cows that will not pay a profit.

If you know the amount of feed each cow is
getting, will weigh and test her milk, the prob-
lem is solved. The dairy business in Utah is
growing and there is every reason why it should
be developed. With alfalfa, ensilage and other
feeds we can produce butterfat as cheaply as any
country, if we have the right kind of cows. What
we need is more cow-testing associations. Every
owner can do the testing, but he does not do it
like the members of the association do.

There is money in feeding good cows. Dairy
products are some of the best foods we can have.

FARMER DOING HIS SHARE

There is so much being said these days about
what the farmer ought to do that we wonder if
someone else should not do something for our
country in winning the war. The farmer will do

his share, but he does not like to see the specu-
lator make more money out of his products than
he has done in producing them.

Help is what the farmer needs just now—the
kind that likes to work, who are not afraid of
work. He does not look kindly on the inexperi-
enced help.

The farmers have, in nearly every instance,
planted all the crops and acreage they can take
care of. They are working day and night right
now to make these crops produce just as much as
possible. The farmer is doing his share. If we
want to help him, he does not need it so much
in the way of advice as he does help, money to
pay help and buy better equipment, silos and new
machinery.

Utah is going to do her share in the increased
production of foods.

BUILD A SILO

Our experience of the long, hard winter that has
just passed should teach us a lesson and help us
to prepare for next winter. Think of Utah having
to ship in hay to feed our livestock! We must
plan now and plant some corn or other ensilage
for next winter. The silo seems to be the best
way to meet this feed situation.

Every man who owned a silo last winter and
had it filled last fall is a booster for the building
of more silos.

In our town, where they had eight last winter,
twelve more are to be built this summer. What
better argument can be given why you should
build a silo, if you have livestock of any kind
that are to be fed?

Corn, oats and peas and other crops for en-
silage can be grown here as well or better than
in any other place.

Ensilage with our alfalfa makes the best kind
of feed for nearly every kind of livestock.

CARE OF ALFALFA

The high price of alfalfa should make everyone
think and plan how we can conserve and care for
our coming crop in the best way.

The scarcity during last winter showed the im-
portance of having a good supply of alfalfa.
Cutting it at the right time, curing it in a way
that you can save all the leaves, getting a good
color during the making are all important.

After it is ready for hauling, next problem is to
stack it in good shape. At present prices one can
afford to buy enough lumber to make a cover-
ing, for it doesn't take many tons of spoiled hay
to buy enough lumber for a top cover. The sides
and ends are not important.

Look ahead just a little and prepare now, so you
can take care of your alfalfa. Hay is not go-
ing to be cheap this year, and everyone should
plan now to make his alfalfa go just as far as it
will. You can afford to spend a little extra time
in the curing of your hay when the price is so
high.

A PROSPEROUS COUNTRY

Everyone is busy, or should be. There is em-
ployment for all who will work. The farmer is
getting good prices for all his products. The
prospects for a harvest are good. What more
could we ask to make a country prosperous?

It is true we are one of the nations at war,
which creates a feeling of uneasiness, but from
a monetary point of view we were never so well
off. The money we are loaning our allies is all
being spent here for foods and supplies.

There is need of a greater food production and
conservation, because the world needs it. We
should learn what thrift really means, for the
more we save the more we have to sell. We
should work all the harder in order to make more
money. This does not mean, however, that we
should go without those things we really need.

Make every dollar you spend go where it counts
for something useful.

Ours is the most resourceful country on earth,
the greatest nation. Follow our great leaders and
we will continue to have the most prosperous
country.

GOVERNMENT CROP REPORT

Washington, D. C., June 8.—A summary of the June crop report for the state of Utah and for the United States, as compiled by the Bureau of Crop Estimates, (and transmitted through the weather bureau), United States Department of Agriculture, is as follows:

Winter Wheat

Utah—June 1 forecast, 5,190,000 bushels; production last year (final estimate), 5,000,000 bushels.

United States—June 1 forecast, 373,000,000 bushels; production last year (final estimate), 481,744,000 bushels.

Spring Wheat

Utah—June 1 forecast, 2,680,000 bushels; production last year (final estimate), 1,900,000 bushels.

United States—June 1 forecast, 283,000,000 bushels; production last year (final estimate), 158,142,000 bushels.

Oats

Utah—June 1 forecast, 5,050,000 bushels; production last year (final estimate), 4,480,000 bushels.

United States—June 1, forecast, 1,380,000,000 bushels; production last year (final estimate), 1,251,992,000 bushels.

Barley

Utah—June 1 forecast, 1,390,000 bushels; production last year (final estimate), 1,224,000 bushels.

United States—June 1 forecast, 214,000,000 bushels; production last year (final estimate), 180,927,000 bushels.

All Hay

Utah—June 1 forecast, 1,288,000 tons; production last year (final estimate), 947,000 tons.

United States—June 1 forecast, 102,000,000 tons; production last year (final estimate), 109,786,000 tons.

Pasture

Utah—June 1 condition, 99 per cent, compared with the ten-year average of 91 per cent.

United States—June 1 condition, 83.8 per cent, compared with the ten-year average of 89.5 per cent.

Apples (Agricultural Crop)

Utah—June 1 forecast, 144,000 barrels of 3 bushels; production last year (final estimate), 33,000 barrels.

United States—June 1 forecast, 25,400,000 barrels of 3 bushels; production last year (final estimate), 67,415,000 barrels.

Sugar Beets

Utah—June 1 condition, 100 per cent, compared with the ten-year average of 90 per cent.

United States—June 1 condition, 93.7 per cent, compared with the ten-year average of 89.7 per cent.

Prices

The first price given below is the average on June 1 this year, and the second, the average June 1 last year.

Utah—Wheat, 235 and 90 cents per bushel. Corn, 169 and 75 cents. Oats, 115 and 05 cents. Potatoes, 280 and 113 cents. Hay, \$26.20 and \$12.20 per ton. Eggs, 30 and 20 cents per dozen.

United States—Wheat, 248.5 and 100.0 per bushel. Corn, 160.1 and 74.1 cents. Oats, 69.9 and 42.1 cents. Potatoes, 274.0 and 93.8 cents. Hay, \$15.25 and \$12.46 per ton. Eggs, 31.1 and 19.0 cents per dozen.

Crop Summary

Farm work has been seriously delayed by muddy fields. Seeding not yet completed. All early seeded crops, except corn, show good stands. All are looking well though growing rather slowly. Alfalfa is especially good. The cool weather has retarded the ravages of the weevil more than it has the growth of the alfalfa. The acreage of spring wheat is unusually large. Pastures are very good. Livestock generally is rapidly recovering from the effects of the severe winter. Very little fruit has been damaged by cold and a heavy crop is expected.

M. M. JUSTIN,
Field Agent for Utah.

Fiance—And will Bobby be sorry when I marry his sister?

Bobby—Yes, I will, 'cause I like you.

FITTING THE TRACTOR TO YOUR FARM

By William Olson.

Most of us who have watched the wonderful progress in the farm tractor industry, already foresee a day not very far distant when practically every farm of 80 acres or more will have its tractor. Five years ago, yes, even three, the boldest optimist would not have dared foretell such a radical change in the American method of farming. Today, however, all eyes are turned tractor-ward. There is hardly a progressive farmer anywhere in this country that is not reading about tractors, studying tractors, watching tractors—all with the ultimate object of fitting the right tractor to his own farm.

The development of new types, particularly the invention of the two-wheel tractor where light weight is combined with unusual power and convenience of handling—has opened the way for power farming on thousands of farms where it has hitherto been impractical.

If you have not begun to inquire into the fitness of tractors for your farm you will be surprised to find how the inventive genius for which America is famous has conquered the obstacles which you have thought stood in the way of your owning and using a tractor. And if you have not investigated the advantages of farming with power you will be surprised at the benefits it will bring you.

Only those who have had the privilege of actually using a tractor can fully appreciate what a blessing they are to the farmer. Think of what it means when the season is backward or when you have an unusual acreage to prepare for crops to be made to accomplish in one day what has always taken two to four days. Think of the bigger crops which we now know follow the deeper, better plowing of the tractor. Think of the saving in hired help—the freedom from worry about getting crops in, taking care of them or getting them harvested just when they are ready. Think of the freedom from chores, the pleasure of farming at top speed, always—in hot weather—in fly time—in fact, all the time. Think of the saving in feed, for the right tractor for your farm will not begin to cost you as much for fuel and lubricating oil as your horses consume in feed by their year around appetites that must be satisfied whether they work or not.

Think of the new interest the coming of the tractor awakens among the boys—how it gives farming a brighter outlook for them—how it relieves much of the drudgery—keeps the boy interested—makes him want to stay where he feels progress is being made.

Buy such a tractor and treat it with the same consideration you would any other good piece of machinery and you will soon be a power farming enthusiast.

CONSTRUCTION OF THE FARM FENCE

By W. Ernste.

Good fencing is so cheap and, if properly put up, so lasting that the farmer cannot afford to bother with a poor fence. As a rule, we join fences with neighbors, but have on some of the farms built fences entirely on our ground and have in this way sacrificed an acre or two of hundred dollar land. We have done this for two reasons, without ill-will to the neighbors, simply for self-protection. The first reason is to protect our livestock because no barb wire fence is fit for a partition fence when a pasture is on each side of the fence. If horses are on both sides it is only a question of time when a horse will paw over the wire to be ruined entirely or damaged to a greater or less degree. If cattle are on both sides, an old bull will not stand for a fence and will break it down and perhaps get ruined. We lost a \$500 bull a few years ago, and this \$500 would have paid for fencing a whole section of land. We have had more than one

valuable mare blemished, making them unsalable. Several in the course of years got hurt so bad that they had to be destroyed. I am frank to say that we would be way ahead had we never joined fences with neighbors on the same section.

A second reason for not joining fences with neighbors has been the fact that they would not build a lawful, substantial fence. I am not much acquainted with the law that governs the building of fences because we never enter into a lawsuit unless we are forced into it; we would sooner sacrifice considerable rather than enter into a lawsuit, a practice for which we have never been sorry. I know that we are ahead of those neighbors who have been lawing. If trouble is brewing, better arbitrate.

The building on your own ground eight feet from the line will leave a gap in the neighbor's fence that he can't close without your consent, and his field is open unless he builds a fence all along the farm and it is a question in my mind if he will not be compelled, at least, to build one-half of the fence on his own ground away from the line.

There are a number of good kinds of posts, but the fence depends entirely on the corner post and straight line. The corner post should be put in the ground from five to six feet and notched every eight or ten inches and either a stone or a piece of hedgewood a foot or sixteen inches long tamped solid into those notches. Then a long, heavy brace should be placed between the corner and the next post. We find that good, substantial posts, about twelve feet apart, will make an ideal fence. However, a good post every three or four rods will do, with a stay every twelve feet. This stay may be made out of any kind of wood or post of less lasting quality than the hedge post, providing, however, that the line is perfectly straight. A ringing tight wire will hold the post that may be weak or rotting off in place.

To tighten the wire, both netting and

common barb wire, we have used many different devices, but to our notion nothing beats the common farm wagon should be backed, partly loaded with no matter what, to give it weight, against the corner post. A brace should be put against the hind axle and corner post. This brace should be of considerable length. Then one hind wheel should be raised clear off the ground by placing a piece of plank under the axle next to this wheel. Now a strong rope is to be fastened to the wire and wrapped around the wagon hub, and two men can make the wire as tight as it can stand it. Galvanized wire is the only kind we use, because the painted wire is bad for cuts as long as the paint stays on, and will rust and make equally dangerous cuts when rusted.

Of the galvanized wire, we use that which is not tempered too hard and which has only short, thick-set barbs. If we use netting we prefer twenty-six inches high with a barb below and on top. This will make an ideal hog fence alone, and if three common barb wires at a proper distance are used above, the fence will turn most any kind of livestock. If netting alone is wanted, we prefer two twenty-six inch nettings one on top of the other, to one fifty-two inches high. They adjust themselves better on rolling ground, and handle better if the fence is to be moved some time or other.

It should not be forgotten to use a piece of wire every third or fourth post for grounding lightning, which otherwise may run along a fence for a long distance to the great danger of stock that might drift against a fence in a thunder storm. We know of forty head of cattle being killed by one stroke of lightning.

There may be some sections where the fences can be built on the division line and answer every purpose that is needed by those on either side. This will save time and material.

Local conditions often enter into many of the questions I have written about.

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HOME

THE FOOD VALUE OF BEANS

Since earliest times lentils, beans, peas, and other legumes have been common articles of diet. Except for analytical studies very few investigations have been made with a view to determining their nutritive value as compared with other foods, although their importance as articles of diet is quite generally appreciated.

Dried beans are perhaps the legume most often used in this country. Baked beans and bean soup are very commonly eaten in America and boiled beans, seasoned in various ways, are equally common in Europe. On an average American dried beans, such as are ordinarily used for baking, contain 22.5 per cent protein, 1.8 per cent fat, 59.6 per cent carbohydrates, and 3.5 per cent ash, in addition to 12.6 per cent water. Of the total carbohydrates, crude fiber constitutes 4.4 per cent. Dried beans, on an average, have a fuel value of 1,600 calories per pound.

Prof. Harry Snyder of the Minnesota Experiment Station, has recently studied the digestibility of beans, the comparative composition of raw and cooked beans, and the possible losses in nitrogenous material when beans are soaked and parboiled in water containing a little baking soda to remove the skins before baking, and related topics.

In the digestion experiments baked beans formed a considerable part of the diet of healthy men who were engaged in fairly severe muscular work. The beans had been soaked in soda and water to remove the skins and were baked in the usual way, butter being added. The composition of the raw beans was practically the same as the average figures given above. The cooked beans contained much more water than the raw, the amount being about 70 per cent. The fat content of the baked beans was also much greater on account of the butter added, averaging from 3 to 10 per cent. When eaten with bread and milk, it was found that on an average 90.91 per cent of the dry matter, 80.22 per cent of the protein, 79.82 per cent of the fat, and 96.19 per cent of the carbohydrates of the baked beans was digested. When the beans were eaten with a diet furnishing considerably more fat, somewhat higher values were obtained. Generally speaking, these figures are greater than those obtained by a German investigator. Prausnitz, for boiled beans, his values being 81.7 per cent for dry matter and 69.7 per cent for protein. In the German experiments the beans used were cooked in such a way that they retained their shape. If they had been more thoroughly cooked to a pulp or had been mashed, it is probable that the digestibility would have been increased. In Professor Snyder's experiments the carbohydrates were found to be more digestible than any of the other nutrients. The protein was most variable in digestibility, ranging in the different tests from 72.26 to 86.81 per cent.

Considering the test as a whole, it will be seen that the beans were quite thoroughly digested. They are often considered by popular writers to be indigestible, or, more properly speaking, to be difficult of digestion.

Concerning this point Professor Snyder states that individuals differ in regard to their ability to digest beans, but when properly combined with other foods, they cannot be considered indigestible. Beans are, however, slow of digestion and require more intestinal work than many other foods, but when properly combined so that they form a portion of a ration, the work of digestion is more evenly distributed than when they are used alone and in large amounts. In using beans in the dietary, they are frequently eaten in excessive quantities at irregular intervals, rather than in reasonable

amounts, combined with other foods, as a regular part of the ration.

In preparing beans for the table, soda is often employed to soften the skins so that they can be readily removed. In the experiments at the Minnesota Station a half teaspoonful (3 grams) of baking soda dissolved in two quarts of water was used to a pound of beans. When the beans were parboiled before baking, some two-thirds of the water and 84 per cent of the soda were absorbed. The soda retained had probably entered into chemical combination with the proteid material of the beans. Only 0.66 per cent of the total nitrogen of the legumes was extracted by the water used for parboiling them, so this loss of nitrogenous material is unimportant. The skins removed by parboiling constitute about 6.5 per cent of the total dry matter of the beans. As shown by analysis, bean skins contain a relatively small amount of protein and a fairly high percentage of crude fiber. Crude fiber is not well digested by man, and the removal of a considerable portion of it is, therefore, no disadvantage. "The fiber lessens the digestibility of the beans by preventing the solvent action of the digestive fluids. The treatment with soda and the removal of the skins changed the chemical and physical composition of the beans so that they were more completely and readily digested." A small amount of the germ adhered to the skins and was removed with them. The germ and skin are the parts of the bean which are the most fermentable and produce sulphureted gaseous products during digestion.

The digestibility of the skins which were removed, as well as that of the beans baked with and without parboiling, was tested with ferment solutions. It was found that the treatment with soda and water had a favorable effect upon the digestibility and food value of the beans, as it enabled the digestive ferments to act with more readiness upon the protein—in other words, the beans thus treated were more quickly digested. It is a matter of common observation that when beans are properly prepared with a small amount of soda and salt there is less difficulty from the formation of gas in the intestines during digestion.

Discussing the cost of beans as compared with other foods and their importance in the diet, Professor Snyder concludes that beans at ordinary prices are among the cheapest foods for supplying protein. A pound of beans costing 5 cents contains about one-fifth of a pound of digestible protein and somewhat less than three-fifths of a pound of digestible carbohydrates, mainly in the form of starch. In the experiments reported, over a pound of baked beans was consumed per day by men engaged part of the time in active outdoor work. It is believed, however, that not more than 4 ounces of uncooked beans or 6 ounces of baked beans should be consumed in the daily ration.

While beans are a valuable food, there are certain limits beyond which they cannot be used to advantage in the dietary. The nutrients in beans are different in character from the same class of nutrients in cereals and other vegetable foods and are not as readily digested as those of many of the cereals. Hence beans are suitable for persons engaged in active outdoor work, rather than for those of sedentary habits of life. However, beans, when properly cooked, need not be entirely excluded from the dietary of those of sedentary habits, though they should not form as large a part of the ration as in the case of the active workmen leading outdoor lives.

Though the amount of protein in beans is large, they contain only a small amount of fat, and hence the addition of fat, either by salt pork or butter, in preparing for the table is



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reasonable, since, in addition to improving the flavor, it makes a better balanced article of diet.

BRAN FLOURS FOR HOME BREAD-MAKING

The use of flours which contain more or less bran is sometimes advisable both for the sake of the variety which they give to the diet and because of the mineral substances and growth-regulating substances these flours contain. Recipes for home-made bread from whole wheat or graham flour, from home-ground flour, from rye, rolled oats, etc.

Whole Wheat or Graham Bread

1½ cups lukewarm milk.
3 tablespoons brown sugar.
1¼ teaspoons salt.
3 cups whole wheat or graham flour.
½ yeast cake.

Scald the milk, together with the sugar and salt. When lukewarm, add the yeast, mixing it first with a little of the milk. Add the flour, beat well, and let it double its volume. Beat it thoroughly, put into a pan, and let it rise. In a pan of standard size it should come nearly to the top.

The above recipe may be used in preparing bread from home-ground meal. There are many homes, particularly in the country, where the housewife can obtain unground wheat at moderate cost. If ground in the ordinary coffee mill, such wheat makes a coarse bread, not very light in texture, but of such good flavor that it may well be used occasionally to give variety to the diet. It is useful, too, in places where good bran can be obtained easily and where coarse breads are desired as a means of preventing constipation. In making such bread with a view to economy the housekeeper should compute what it will

You Want Good Jelly

It's not too early to start plans for jelly making. You want a lot of real good jelly next winter; it's delicious and will help reduce the high cost of living. Order your

EXTRA FINE Table and Preserving Sugar ABSOLUTELY PURE

Now and have your bottles, glasses and jars ready for the fruit. Put up as much fruit as you possibly can as rapidly as it comes in.

This pure sugar may be had in 10, 25, 50 and 100-pound bags at all grocers.

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cost her per loaf, including labor and fuel, as compared with other bread she makes. Skim milk instead of whole milk can be used; home-made yeast, either liquid or dry cakes, is

possibility; and some might like the bread with less sugar or unsweetened. Another recipe which has been worked out follows:

Home-ground Wheat Bread

1 1/4 cups water or skim milk.
1 1/4 teaspoons salt.
1 tablespoon sugar.
3 cups home-ground wheat flour.
1/2 cake dry yeast or 1 gill liquid yeast.

Set a sponge at night, using half of the flour. In the morning add the rest of the flour, beat well, put into a greased pan, allow to rise until it doubles its bulk and bake.

Cornmeal and Wheat Bread

1 1/2 cups milk, water, or a mixture of the two.

1/2 cake compressed yeast, or 1 1/4 cups milk, water, or a mixture of the two.

1/4 cup liquid yeast.
1 1/2 teaspoonful salt.

1 tablespoon sugar.

Butter (if used), 1 tablespoon.

1 cup cornmeal.

2 cups wheat flour.

Pour 1 1/4 cupfuls of the water over the cornmeal, salt, sugar, and fat (if used), and heat the mixture gradually to the boiling point or nearly to it and cook 20 minutes. This cooking can best be done in a double boiler. The water is sufficient only to soften the meal a little. Allow the meal to cool to about the temperature of the room and add the yeast, mixed with the rest of the water (1/4 cupful), or the 1/4 cupful of liquid yeast. Mold thoroughly, let rise until it doubles its bulk, make into a loaf, place in a pan of standard size, allow to rise until it nearly fills the pan, and bake 45 or 50 minutes.

Rice Bread

1 cup lukewarm water, milk, or a mixture of the two.

1 cup uncooked rice.

1 1/4 teaspoons salt.

1 tablespoon sugar.

Butter (if used), 1 tablespoon or less.

1/2 cake compressed yeast.

2 cups wheat flour.

Steam the rice with one-half of the liquid until it is soft. This is done better in a steamer than in a double boiler, for the liquid is so small in amount that the rice does not become soft readily and the presence of the steam helps. Put the sugar, salt and fat (if used) into the mixing bowl and pour over them the remaining liquid (1/2 cupful). When the mixture has become lukewarm add the yeast and 1/2 cupful of flour. Allow this sponge to rise until very light. Add the boiled rice, which should have been cooled until lukewarm, and the rest of the flour. This dough is so thick that some pressure is required to work in the last portions of the flour. Allow the dough to rise until it has doubled its bulk, form into a loaf, place in a pan of standard size, allow it to rise until it nearly reaches the top of the pan, and bake.

Rye Bread

1 quart milk.

2 tablespoons sugar.

4 teaspoons salt.

2 tablespoons butter.

1 cake compressed yeast.

3 cupfuls flour (1 cup being wheat and the remainder rye).

Follow the directions for making wheat bread, according to the short process until after the bread has been molded the second time. At this point the dough should be placed in a six-quart bowl lined with a cloth, into which flour has been rubbed. When the dough has risen to the top of the bowl turn out on a hot sheet iron (a dripping pan inverted will do), over which one tablespoonful of flour has been sprinkled, and put it immediately into a very hot oven. After ten minutes lower the temperature somewhat and bake for one hour. This recipe is a modification of an old German household method of making rye bread.

Roller Oats Bread

2 cups boiling water.

1/2 cup brown sugar.

2 teaspoons salt.

1 yeast cake.

1/4 cup lukewarm water.

1 1/2 cups rolled oats.

5 cups flour.

Dissolve the yeast cake in the lukewarm water. Pour the boiling water over the rolled oats, salt and sugar, and let stand until lukewarm; add the dissolved yeast and flour. Let rise until very light, beat thoroughly and turn into two buttered bread pans. When the loaves have doubled their volume bake them an hour in a moderate oven.

TESTED RECIPES

Beat four eggs slightly, add one and one-half cups of sugar, one-third cup of softened butter, two-thirds cup of grated unsweetened chocolate, one cup cream, one teaspoon vanilla, and a few grains of salt. Cook over hot water until mixture thickens, cool slightly, turn into deep pie plate, lined with paste, and bake in a moderate oven. Cover with meringue, and bake eight minutes to cook meringue.

Orange Whip Pie

One-half cupful of sugar, four egg-yolks, one orange, one pint whipping cream, one level teaspoonful corn starch. Line a deep pie tin with the paste, prick with a fork to let the air out, brush with egg mixture and bake in a very hot oven. Set aside to cool. Whip egg-yolks light, and gradually add sugar with which corn starch has been sifted, then the juice and grated rind of orange. Cook in a double boiler till very thick, then cool. Whip cream and sweeten slightly. Take half of it and fold into above mixture after it has become perfectly cold. Turn this out into the crust shell and heap the remainder of the whipped cream over the top of the pie. To be at its best, the filling for this pie should be very cold, therefore, should not be put together until just before serving.

Cocoon Gems

Beat the yolks of two eggs and add one pint of milk; then stir in half a cupful of shredded or grated cocoonut, half a cupful of cornmeal flour, in which sift two rounding teaspoonfuls of baking powder and half a teaspoonful of salt. Beat thoroughly; then add the whites of the eggs beaten stiff. Fill gem pans two-thirds full of this mixture, having the pans ungreaed and hissing hot before turning it in. Bake in a hot oven for 20 minutes. This makes an excellent luncheon dessert, served with a sweet sauce.

Peach Meringue Pie

Crust—One cup flour, pinch of salt, one teaspoonful baking powder, one tablespoon shortening. Filling—Eight large peaches, two eggs (whites), two tablespoonsful sugar. Bake pie, and while warm, fill with peaches cut into quarters. Cover with meringue and place in oven a few minutes to brown. Blackberries, raspberries or huckberries in season may be substituted for peaches. This makes a dry, delicious pie.

Strawberry Kiss

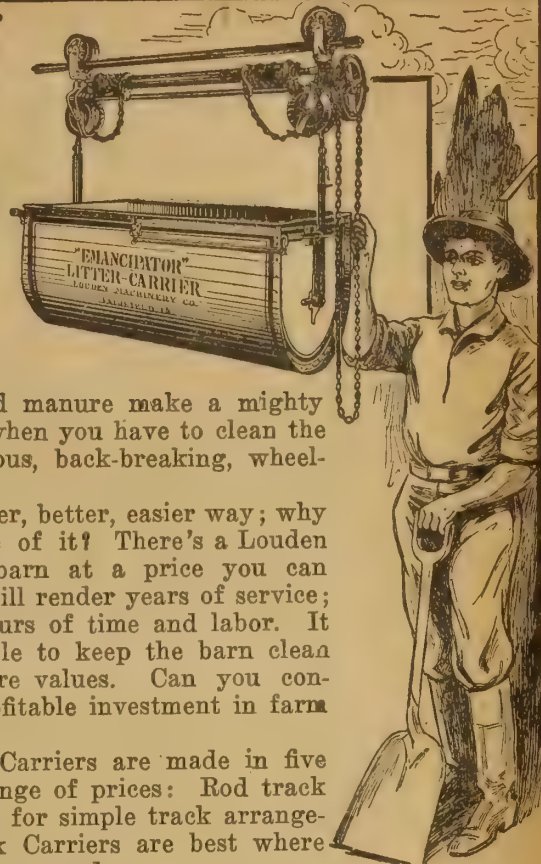
Whites of three eggs beaten stiff, add one cup of granulated sugar, one teaspoonful of vanilla, one teaspoonful of vinegar, a pinch of salt, continue to beat for a few minutes. Put in a loose bottom cake tin that has been buttered and bake for a half hour in a very slow oven. When ready to serve, add one quart of strawberries that have been cut in half and sugared, cover with whipped cream and serve the same as shortcake. This is a quantity for six persons.

NOW IT'S WAR ON ANTS

Prevention is better than cure. To avoid a siege of house ants, keep the kitchen and pantry clean and refrain from sweeping crumbs into the back yard.

Ants are attracted by the presence of grains of sugar and crumbs of bread or cake on the floor or shelves. If the insects become too numerous to eradicate in any other way, the best, and many times only effective method, is to find and destroy the nest.

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While there are three or four species of ants that occasionally get into the houses, and little red ants and the little black ants are the most common and troublesome. The little red ant is the true house species, making its nest behind the plaster, wainscoting or baseboard and mantels, beneath flooring and, in fact, wherever there are cavities with external openings. The little black ant is not strictly a house species, although frequently found indoors and becoming at times as troublesome as the red ant. Its colonies are usually located under walks and stones, in the yard and under steps and low platforms.

Look for Nest of Ants

The red house ant is usually difficult to eradicate, but, if the nest is found, two or three ounces of carbon bisulphide can be injected into it, which will kill the queen and workers—present and the rest will then die out in time. The nest of the little black ant is more easily located by following the workers as they leave the house and go into the yard. The nest can be treated with hot water or by injecting carbon bisulphide, which may be applied through one or two holes in the top of the nest. These holes after treatment should be covered over with earth.

Whenever the nests cannot be located, there is no other remedy than the temporary expedient of destroying the insects in the house. One of the best means of effecting this is to attract them to porous sponges moistened with sweetened water and placed where the pests are most numerous. These sponges may be collected several times daily and the ants swarming in them destroyed by immersion in hot water.

Ants Are Fond of Bacon

Another attractive food is a piece of bacon—bacon rind or bone with little adhering scraps of meat and blood. When this is covered with ants it should be burned. The paper in which meat is sent from the butcher, baited with some meat scrapings and crushed into a loose wad attracts the ants. A steady campaign for a few days causes great destruction of the colonies, and may even completely eradicate them.

A more efficient remedy, where it can be safely used, is a syrup poisoned

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Lehi, Utah

with arsenate of soda. The ants will collect this poison syrup and convey it to their nest, so that not only those which collect the syrup are ultimately killed, but the inmates of the nests succumb. Use one pound of sugar dissolved in a quart of water, to which should be added 125 grains of arsenate of soda. The mixture should be boiled and strained and on cooling used with sponges, as already described. The addition of a small amount of honey is said to give additional attractiveness. Naturally the greatest precautions should be taken in preparing this syrup and in safeguarding it afterwards to prevent its poisoning human beings or domestic pets.

PREPAREDNESS IN PERMANENT HIGHWAY CONSTRUCTION

(Continued from Page 3)

action of the rear driving wheels displaces not only the surface binder, but the road materials as well, scattering them beyond recovery.

Later on rain penetrates the road and softens the base and foundation. The road in turn settles, thus breaking the bond and permitting the loosened stones to be displaced.

Having discovered the reason for this comparatively rapid deterioration of our so-called improved roads, the next point in order was to find a cure. After more study and more investigation, a verdict was issued to the effect that we must either do away with our automobile and motor truck traffic and revert to the horse-drawn vehicle—take a step downward on the ladder of Progress, so to speak, or construct a highway that would conform to new conditions of traffic. A corresponding improvement was absolutely essential; we could not have one without the other.

The realization of these facts marked the beginning of an entirely new regime in road construction, and the demands for a type of highway which could be considered permanent under these new and varied conditions of traffic, has developed into what is commonly known as the good roads movement. It is nothing more or less than the cry of a much-abused public, which for years has been hopelessly burdened by so-called road taxes, which after their collection by the county road officials were sunk into highways that soon transformed themselves into veritable sloughs of mud and dust, and were highways no longer. The public was awakened, and is demanding visible returns for their hard earned dollars and cents.

Good roads mean progress and prosperity; they are a benefit to the people who live in the cities, an advantage to those who dwell in the country, and they help every section of our vast domain. Good roads, like good streets, make habitation along them most desirable; they enhance the value of farm lands, facilitate transportation and add untold wealth to the producers and consumers of the country; they are the milestones marking the advance of civilization; they economize time, give labor a lift, and make millions in money; they save wear and tear and worry and waste; they beautify the country, bring it in close touch with the city. They aid the social and the religious, the educational and the industrial progress of the people; they make better houses and happier hearthside. They are the avenues of trade, the highways of commerce, the mail routes of information and the agencies of speedy communication; they mean the economic transportation of marketable products—the maximum burden at minimum cost. They are the ligaments that bind the country together in thrift and in industry, and in patriotism, and in intelligence; they promote social intercourse and prevent intellectual stagnation; they increase the happiness and prosperity of our producing masses; they contribute to the glory of the country, give employment to our idle workmen, distribute the necessities of life—the products of the fields, the forests and the factories—encourage energy and husbandry, inculcate love for our scenic wonders, and make mankind better and broader, and greater and grander.

Nothing can more completely or more efficiently express the meaning of good roads than the above classic. To the thinking and progressive men and women of the nation it represents facts undeniable—arguments unanswerable.

Thus it happens that the good roads movement in this country today has reached mammoth proportions, and like safety first and preparedness, is the slogan of the age—the very spirit of the twentieth century, and any community or individual that is not interested in, or that is trying to thwart this most worthy movement, is not

progressive, is dead, and should be buried.

A most prominent government official recently made the statement that whether in war or in peace he could no more efficiently serve his country than to aid in the promotion and construction of good highways. If we have war we must have roads; if we have peace we must also have roads.

It is a well known fact that the good roads leading from Paris to the western front in France were highly instrumental in saving that city from the German invasion. The French soldiers were brave, very brave, but due to the inadequacy of the railroads it would have been impossible to have met the Germans, where they did, had it not been that the highways leading there-to were constructed of such a permanent nature that they were able to stand up under the almost inconceivable traffic conditions to which they were subjected.

Perhaps, some day—who knows?—our own highways may save us from invasion. Think, Mr. Citizen, are our highways, like those in France, built of a nature, that they will resist abnormal traffic conditions? The answer is that most of them are not—indeed they will not stand up under present needs.

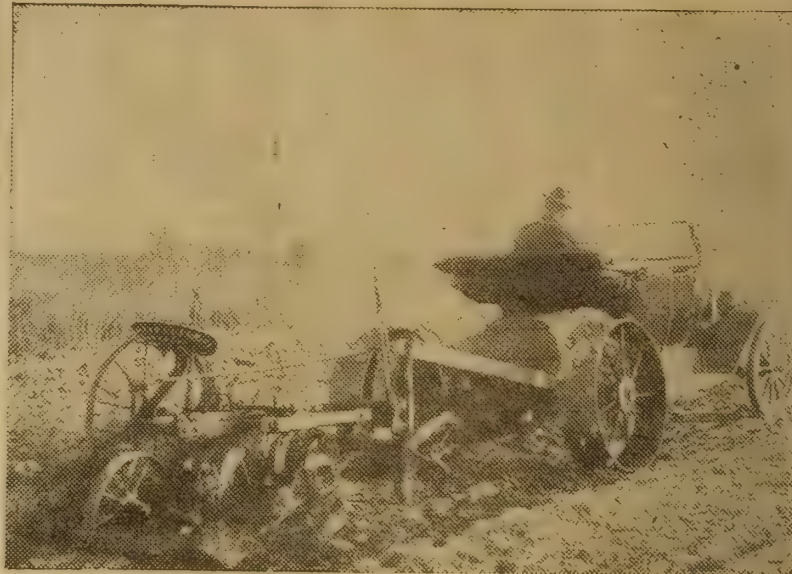
The hour for preparedness in America has struck. We have no more time to loose on the road. The farm and not the munitions plant seems destined to settle this world war, and the efficiency of the farm is determined by the efficiency of the road. In our nation's call to man the fields, is a note which sounds the warning that waste on American highways must stop. Hauling time must be cut down, repair expense rerouted into permanent construction and the roads to the front, to the factory, home and firing line must be kept clear for easier, quicker and more dependable transportation.

Good roads, roads which are not only good today, but roads which will be good tomorrow, next week or even twenty years from now, and for 365 days of each one of the twenty—roads which are permanently good. These are the type for which we have been paying, but have not been getting; these are the kind we desire, must have, and demand.

What is a permanent road, a permanent highway? A permanent highway, first of all, is that type of highway which is being advocated by all those who are interested in the good roads movement; it is that type of highway upon which costs for upkeep and maintenance are so small that this item may be considered negligible; it is that type which will outlive the life of any bonds that may be responsible for its existence, and which is serviceable for 365 days of the year; it is that type which will survive the effects of and stand up under the heaviest automobile traffic, as well as to comply with the requirements for horse-drawn vehicles. It is that type which renders road traveling a pleasure at all times, which offers low resistance to traffic, and upon which the United States government states costs an average of 10 cents to move a load of one ton over a distance of one mile.

What is a non-permanent highway? A non-permanent highway, first of all, is that type of highway which was designed for traffic conditions of centuries ago, and cannot survive the effects of or stand up under traffic conditions in vogue today; it is that type of highway which cannot outlive the life of any bonds that might be responsible for its existence, and which is not serviceable for 365 days of the year; it is that type which requires high yearly maintenance to keep in even passable condition; it is that type of highway which renders road traveling a hardship, not a pleasure, which causes dust to blow in ones face, wagons to shake and rattle, "blowouts" of tires, breaking of springs, etc. It is that type which offers high resistance to all kinds of

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traffic, and upon which the United States government states, costs not 10 cents, as upon the permanent or hard surface type, but from 20 cents to 30 cents, or an average of 25 cents to move the load of one ton a distance of one mile.

In the United States today there are approximately 90,000,000 square yards of highways which are considered of a permanent nature. Such a yardage would pave a road sixteen feet in width for a distance of exceeding 9,500 miles. The states of California, New York, Wisconsin, Ohio and Michigan lead in the amount of permanent highways within their confines. In practically all of these communities permanent construction was resorted to because it was learned by years of experience that the cost of non-permanent, old-fashioned, non-improved and so-called makeshift highways spread over a period of twenty years, far exceed the cost of modern, hard surface highways, spread out over the same period of time.

The cost of maintaining our highways is proportional to the number of vehicles using them—the greater the amount of traffic, the greater the maintenance. For instance, it has been definitely determined by highway experts that where a so-called non-permanent, gravel or macadam highway is subjected to a daily mixed traffic of 200 vehicles, or more, it is economy to replace that highway with a hard surface pavement. Are there 200 or more vehicles using the non-permanent highways in your community, Mr. Taxpayer? If such is the case, it is your duty, as a citizen, to see to it that a thorough investigation of the cost of maintaining that highway be made. The results of that investigation will undoubtedly disclose the fact that as in other communities it will be economy to replace your present highway system with modern hard surface pavements.

Hard surface roads will reduce your hauling costs, and thereby cut down the present excessively high prices of necessities of life; they will double your land values, for they cannot help

but attract to your community many tourists and other visitors who would otherwise "pass you up" for a community having more attractive highways than yourself. Hard surface highways require such a small amount of maintenance in order to keep them in perfect condition for 365 days of the year that a goodly part of the moneys which were necessarily used for keeping the old-fashioned roads, which they would replace, in just passable condition, for only part of the year, could then be spent upon the feeders, and the other highways of lesser importance throughout the community, which heretofore have undoubtedly been sadly neglected on account of the lack of the necessary funds. In this way every property owner, no matter how isolated he might be, would be directly benefited.

There are several types of permanent or hard surfaced highways which have proven highly successful throughout the United States. Of the 90,000,000 square yards which represents the total amount of permanent construction, previously mentioned, practically all have been built on solid concrete foundations, while 75,000,000 of which have concrete wearing surfaces as well. A highway, like a building, bridge or any other engineering structure, cannot be considered as permanent unless it has for its foundation solid rock, or its equivalent, concrete. It is this concrete foundation that distributes the loads and bridges over the weak spots in the sub-grade. Without such a foundation the building or bridge or highway is liable to sink into the sub-base which supports it.

Highways built of concrete throughout are now in their twenty-fifth year of service, and are becoming more popular every day. Wayne county, Michigan, alone, has approximately 167 miles of this type of road construction; Milwaukee county, Wisconsin, has 111 miles; Vermillion county, Illinois, has 144 miles under construction; Tulare county, California, will build 175 miles, and so on throughout almost every state in the union. The

PLAN NOW TO BUILD A SILO

(Continued from Page 3)

to our livestock, large quantities of grain can be released for direct human consumption. The use of these crops in this form will greatly increase the possibilities for meat and milk production.

The silo must be regarded as one of our great conservation agencies and its more universal use will not only increase the amount of human food produced, but increase the farmer's profit as well because it will turn into dollars much that has hitherto been entirely wasted. In the recent crisis conservation and full utilization of that which is

produced is of even greater importance than increased production.

Economy demands that all crops that can be turned into dairy products or meat be taken care of this year.

I have talked with several who built silos last year and they say that they paid for themselves in the one season. Price of hay is going to be high again this year, because we have no surplus carried over. It is to be hoped it will not be as high as last year, but even at half the price the silo is a profitable investment.

The progressive farmer is now planning for next year's feed. He is looking ahead. Some

farmer who does not have the land can contract corn acreage and use it for ensilage.

The strongest argument for the silo is that those who used them last winter are building more, if needed, and telling their neighbors how good it was for them last winter.

It is important that every man get busy on this proposition at once and not only take advantage of the exceptionally high price for dairy products and livestock, but realize that by producing a good supply of these food essentials he will be helping the country in what may be the greatest crisis of its history.

chief reasons for the popularity of concrete roads is that they can be built more cheaply than any other type of permanent construction, and from materials and with labor to be found in almost every state in the union. They are also long of life, and require but a very small amount of maintenance to keep them in good condition at all times. Their hard, gritty surface makes them especially adaptable to horse-drawn traffic, and their light gray color, contrasting with the ground on either side, makes driving at night quite safe. They are also unaffected by climatic changes, and are just as hard on the hottest day of summer as upon the coldest day of winter.

The price of permanent highways is nothing more than the desire. Every trunk line highway from the Atlantic to the Pacific, and from the Canadian border to the Rio Grande, should, and will, be paved with some hard surfaced material. Already Uncle Sam has appropriated millions with this end in view. But you, and your county, and your state, must all "do your bit" in this vast undertaking, and permit no one to discourage or detract you from this most worthy purpose. No other enterprise within the bounds of the imagination could so benefit all the people of this nation, so effectively conserve its vast resources, cut down the high cost of living or better prepare it for war, than this one.

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Cultivation of Dry Farm

By J. W. Paxman.

Now that such crops as corn, potatoes and beans are planted, the next step is to take proper care of them that the maximum production may be obtained. In dry farm methods there are two important items always brought into prominence—conservation and cultivation. These two things are eternally hammered on in all dry farm propaganda as fundamental. In fact, it is the latter, cultivation, that makes for the former, conservation, so the cultivation becomes the chief cornerstone in dry farm practice.

The crops above referred to require frequent cultivation—a shallow culture of the soil's surface. The use of the common spike-tooth harrow is the most economic, and perhaps the best means of cultivating both corn and potatoes until the plants are six inches high. The heavier lands should receive three or four rather vigorous harrowings from a few days after planting until plants get six inches high. A seemingly slight mutilation of the tops will not materially injure the plants. They will assume greater vigor within a few days. If soil is light and loamy a less vigorous operation will suffice.

If the crop is tepary beans the same

operations can be pursued, as the vines of this variety are hardy and will stand pretty rough cultivation until the runners on the vines are six to eight inches long. If other varieties of beans, more care should be exercised, especially as the young stage of the plant, from time of peeping through the ground until fourth leaf appears.

The cultivation of all these crops should be shallow at the start and increased to about three inches at the last harrowing.

After period of harrowing is past, any good cultivator can be used to advantage and should be used from too to five times before the crops begin to mature. Stir the ground frequently, using due care, and the increased yields will more than pay for the labor expended. If such cultivation is not effective in eradicating the weeds, bring the hoe into service, and remember that weeds in your fields are a help to Germany—for the weed is an enemy to production and every farmer's patriotic duty is to produce his best.

Cultivate to conserve moisture, to eradicate the weeds, to provide fertility and to add to products.

QUESTIONS AND ANSWERS

Garland, Utah, May 29, 1917.

The Utah Farmer, Lehi, Utah.

Gentlemen: A question I would ask of your paper. I have a cow that was doing very well last winter and during that very cold spell of weather she took a chill and she dropped off on her milk so that she did not give over a pint a day. She gave stringy milk and we have not been able to get her back to her milk. I would like to know if when she is fresh again if you think that she will be as good as ever. What would you advise me to do? She is a No. 1 cow and I do not feel like selling her. She has a good appetite and is getting fat. She will be fresh in November. Will it be best to let her go dry now? Please answer through your valuable paper, and oblige, yours truly,

A SUBSCRIBER.

Answer:

Where a cow performs as you have described, it will be well to treat her immediately for the trouble. If the milk becomes stringy it indicates that something has gone wrong with the udder—either an infection or a chill. A cow should be milked from three to four times a day where a condition of this kind exists, and if there should be a stoppage of one or more of the teats this should be opened up with a milking tube, and under no consideration allowed to immediately dry up, as this is bound to spoil a good milch cow. It is possible that the cow will do all right the next time she freshens. However, as a rule they will not milk as long during the next period as they should. Again, they may have an infection of the udder and the same condition arise as the cow has at the present time. By milking three or four times a day you extract all the material from the udder and do not allow an accumulation of stringy milk to infect the udder. Good systematic

massage after each milking should help in overcoming the trouble.

Manti, Utah, May 30, 1917.

Editor The Utah Farmer, Lehi, Utah.

Gentlemen: Please answer the following question through The Utah Farmer. Is it possible for a horse to get the full benefit from oats fed whole, when from 40 to 50 per cent passes whole and will grow when planted? I have read "they have teeth to masticate the oats," but everyone tending horses knows they do not masticate more than 60 or 70 per cent of them.

I expect an answer this time. I received none on the farm loan question. I have subscribed for The Utah Farmer many years. Yours truly,

CHRISTIAN MUNK.

Answer:

It is not possible for a horse to get the entire benefit from oats fed as you have described. There is undoubtedly something radically wrong when a horse does not digest any more than 40 to 50 per cent of the oats he eats. Either the horse eats the grain too fast or he has defective teeth which causes him to swallow it whole. In that event, he could not get all the nourishment from the grain. If the horse eats his feed too fast, it might be well to feed him from a box containing a number of cobble rocks so that he could not get the oats too fast. The oats are poured among the rocks and in that way it takes the horse some time to get it. As a result he usually chews it better. If the teeth are defective—which is probable—you should call in a competent veterinarian to rectify the trouble. Then I believe your animal would get the full benefit from the grain you feed it.

GETTING ALONG WITH THE BEES
 By Miller Purvis.

I keep bees primarily because they fertilize the blossoms of all orchard trees, berries and vegetable, which

makes better crops. I began five years ago with one colony, but without any plans for ever keeping more than two or three. That swarm, however, gave me two more and when one noon two more came and settled on the shade trees about the house, I could not resist the temptation to catch them in some empty boxes to keep them until I could go to town, half a mile away, and get hives for them. This gave me five colonies at the end of the season and from these I got enough honey for the families of two neighbors besides enough for ourselves.

The profit of the season was the increase in the number of colonies, the new equipment and the supply of honey we had for the winter. The next year I doubled my bee plant and sold enough honey for the supplies bought and had a little over \$30 left. The year after this I ended the season with eighteen colonies, having sold two during the season. Anticipating a good year I bought my supplies early, but a late frost in the spring and an early one in the fall shortened the honey season so that the bees only made enough honey to carry them. All we saved was what we got from the unfinished sections in the supers, which was enough for our own use and enough to feed back to promote breeding the next spring.

Last spring I found that I had lost three colonies. I do not think they starved as they were well fed as soon as the weather became warm enough to begin flying. I think they drifted into other hives nearby. This left me with fifteen colonies and three empty hives. I filled the empty hives as soon as the first swarms came out and after that kept the queen cells cut out as well as I could, but in spite of all I could do a few swarms came off. When this happened the queen was hunted up and killed and the bees put back in the hive they came from, or were doubled up with the smaller swarms.

By keeping my swarms strong the bees made honey rapidly, and I sold thirty cases for \$90 and had half as much more in the way of unfinished sections for the home supply and to feed back this spring if needed. I do not think feeding will be necessary as every hive has at least fifty pounds of honey left in the frames. I have not spent the equivalent of two days' work in a season on my bees. The fact is that most of the work is done during the noon hour as bees are easiest to handle in the middle of the day when they are busy. When a swarm comes off I do not waste much time with it. I have never had a swarm leave the place. They gather on the fruit trees and after they are well settled I hunt the queen or shake the whole swarm into a trap box and go about my work until the next morning. If the queen is found and killed the bees go back home. If the trap box is used the queen is found without trouble and killed. In these strenuous war times I believe it is a good scheme to put up for a few bees so they can put up for you.

TO FRESHEN WILTED CELERY

Fill a bucket with boiling water and dip the celery in this water, then place it under the hydrant and let the cold water run on it for some time, when you will find its first crispness returned.

LIVE STOCK

GROWING CALVES

By Charles Harris.

I do not believe the average farmer pays as much attention to the feeding and growing of his calves as he should do.

At the present time it is important that we save the calves. The heifer calves so that we can increase the number of livestock.

With calves as with other livestock, care and attention pays a good profit.

The sooner the calf is taken away from the cow and fed by hand, the better. The longer this is delayed the harder it is to wean the calf. Successful dairymen take the calf away when but a few days old—not over three at the most. This early weaning is not only beneficial to the calf, but to the cow as well. After the calf is removed when but a few days old the cow will be more tractable and easily managed. It is also better for a dairy cow to be regularly milked than to be irregularly sucked by a calf. The early weaning is beneficial to the calf because the milk of a good dairy cow is too rich for the calf and there is danger of the calf taking too much, which may result in indigestion and scouring.

The calf should regularly receive whole milk from its mother, or some other good cow, four times a day for at least two weeks. If the milk is rich it should be diluted with one-fourth its bulk of water. The milk should be fed warm. When about two weeks old the calf can gradually be gotten on a diet of skim milk though the change from whole to skim milk must be gradual, else serious bowel trouble will result. At first the milk should be but lightly skimmed, and as the calf becomes accustomed to the change the skimming may be made more and more thorough until by the time the calf is five or six weeks old a skim milk diet is reached.

The quantity to feed is a matter for individual judgment. The effect of the feeding must be carefully watched and the quantity increased or diminished according to the effect. To keep on the safe side, it is perhaps better to feed slightly less than the quantity the calf would eat.

Indigestion or scours in calves usually results from over-feeding, from irregularity in time of feeding, from feeding the milk at too high or too low a temperature, and as a result of feeding the milk in dirty pails. The feeding vessels should be kept thoroughly clean. They should be scalded and sun dried daily. At the first indication of indigestion a little lime water or baking soda in the milk will generally correct the trouble.

As soon as possible the calf should be taught to eat other foods. When five or six weeks old a little of a mixture of bran and shorts should be stirred in the milk and as the calf becomes accustomed to this change, more should be added. A little linseed meal would be a palatable addition. Milk should be fed for five or six months.

The calf should not be permitted to eat any green food until five or six months old. The calf dropped in the spring should not be placed on pasture until the following spring. Fall dropped calves will be ready for pasture in the spring following. For this reason calves dropped in the fall usually do better than those dropped in the spring, as they are ready for the pasture several months ahead of the spring calves. The calf should be taught to eat hay or rough forage as soon as possible.

In feeding calves intended for the dairy herd, the idea should be to keep them growing constantly, without any setback. Food rich in carbohydrates should be fed sparingly, as the accumulation of fat will prevent a healthful growth of bone and muscle.

RAISE MORE HOGS

Meat By the Hog Route

The meat supply of the country can be increased more quickly by the "hog route" than by any other. The country's need to augment its supply is great, but prevailing high prices alone should be sufficient inducement to farmers to raise more hogs. The prospect of success never was brighter. The high prices ruling in all markets show that the demand for pork is in excess of the supply.—United States Department of Agriculture.

No branch of livestock farming is more productive of satisfactory results than the raising of well-bred swine, if conducted with a reasonable care. Hogs fit into the modern scheme of farming on nearly every farm, and are one of the most important animals to raise, both for meat and for money. They require less labor, less equipment, and less capital, make greater gains per hundred pounds of concentrates fed, reproduce themselves faster and in greater numbers, and give a quicker "turn-over" of money than any other animal except poultry. Farmers of the West particularly have awakened to the merits of the hog and are rapidly increasing their output of pork and their bank accounts.

The hog has no rival as a consumer of by-products and numerous unmarketable materials which but for him might be wasted. Kitchen refuse, not only from farms, but also from hotels and restaurants, when cooked before being used, makes an excellent feed.

The value of skim milk as a hog feed is known on every farm though not always fully appreciated. In the neighborhood of many large dairies pork production is a very prominent and lucrative supplement to the dairy industry.

To prevent tuberculosis, all milk and milk products should be cooked before being fed to hogs. To control hog cholera, use sanitary precautions and anti-hog cholera serum treatment.

Give your hog every chance to become meat.

The hog is also a large factor in cheapening the production of beef. Hogs are placed in the cattle feed lots to utilize the corn and other feeds the cattle have failed to digest and which otherwise would be wasted. Hogs following steers in many cases have increased the profit per steer by from \$6 to \$9. Hogs should not be allowed to follow dairy cattle unless the cattle are tuberculin tested.

Demand Is Keen

Disease, such as cholera, has been taking a smaller toll the past season than in recent years; more pure-bred and high-grade hogs are available than ever before; prices of hogs are now past the 16-cent level; demand for pork for home consumption and for export is keen. All of which means that the farmer who does not raise hogs is losing a chance to increase the supply of pork and thus serve the country and at the same time expand a profitable phase of farming.—United States Department of Agriculture.

KEEP BUSINESS LIVELY

In the efforts now being made through the newspapers for economy, it must be borne in mind that insofar as foodstuffs are concerned, it is the elimination of waste which is meant. It is not expected that the public go hungry. Waste of wholesome food is to be deplored at all times, and recognizing the American trait of being extravagant in the waste of foodstuffs, perhaps the emphasis in the propaganda has been a little more on this than in anything else, in view of the fact that America must in a large measure furnish food for our allies in the world war. Economy is a virtue that the average American family does not pos-



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sess to a remarkable degree, not only in the question of food, but as regards everything else that is purchased in the course of living expenses.

It is greatly to be desired that we learn how to economize, but going hungry is not the way. The lopping off of a luxury here and there, fewer theatre tickets, missing a baseball game once in awhile, staying at home occasionally in the evening instead of taking the family to the picture shows, wearing a necktie for longer than a week and various other items constitute economy rather than a boycott on some food which has advanced in price along with other articles.

It is not meant by this that the people should buy only things to eat in these war times. The fact must not be lost sight of that the prosperity of the country more than ever now depends upon normal business in all branches of commerce. But, in the efforts towards economy, all expense items should be taken into consideration and when retrenchment is made, it should not all be done in the matter of buying food. Neither should we take every dollar that comes into our possession and put it in a tin can and bury it, but rather keep it in industrial channels by investment or in savings accounts, to the end that it be kept in circulation, working all the time, bringing prosperity to all classes. This is not the time for hysteria, but instead a sane and sensible course should be adhered to. Hoarding is not economy. A better brand of intelligence is necessary to carry the country successfully through the war.

FARM SCALES

By Samuel Harris.

The day of guessing is past. Keen competition makes it necessary to really know. The farm scale should be used more.

While we find many new implements on the farm, bought for reasons of convenience, necessity and economy, the farm scale seems rarely to be included under any of these heads. It should not be given place on the farm as a matter of convenience, but as a means of transacting business in a business-like way. A few years ago it was not uncommon to have only one party to a deal know the weight of what was sold, and whenever this was the case, that is, when one party to the transaction was permitted to weigh the commodities both ways, there was always a tendency to take advantage of the other less fortunate party, squabbles were frequent and lawsuits numerous. Even today there are thousands of deals put through where the actual weight of the produce sold is known only to the seller. When farmers sell their hay, straw, grain or stock they should know exactly what quality they are selling, and the party who buys has an equal right which no one will question. The only way this may be done is by installing a farm scale.

A farmer may make a mistake in his feeding calculations, he is forced to buy a few loads of hay from a neighbor and should be able to weigh it.

Some people are really dishonest, as the following incident will show:

In a small town a farmer once questioned the scale of a grain dealer, who also sold coal. One day he drove on

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his scales with a high box and asked for a dollars' worth of coal. The wagon was weighed and the farmer drove off. After being gone for a time he drove back again without any coal and asked to be weighed. The dealer said: "Just exactly a dollars' worth of coal on, Henry," when, in fact, there was not an ounce of coal in the wagon." What method will come nearer causing honest weights than an accurate farm scale?

POULTRY

BREEDING FOR EGG PRODUCTION

By F. W. Kazmeier.

The poultry men and farmers are more and more beginning to get interested in the art and science of breeding for increased egg production. They are beginning to realize that a hen with a good breeding record back of her is one that is worth many dollars and cents in the breeding pen. They are willing to accept the fact that feeding alone will not make hens lay. They are willing to further accept the fact that the breeding of a hen is an important factor in egg production.

In my lectures I have often laid stress on the importance of breeding for egg production. I have made the statement that it is the easiest thing in the world to produce a large number of eggs from a flock bred years and years for that purpose. You take a good young hen that has been bred to produce a large number of eggs, a hen that finds it natural to hunt the nest regularly once a day, and feed her well on a ration containing sufficient of all the parts that go into the formation of an egg and she will perform her function well.

About fourteen or fifteen years ago the Maine Experiment Station started the good work of trap nesting and breeding for high producers. At the time, however, our knowledge was very limited and the men in charge at that time were doing missionary work along that line, so to say. They worked along the wrong lines as we will see later.

Their work and experiments were to trap nest their pullets and hens and thus locate the high producers. By high producers we mean individuals laying a large number of eggs. It was their plan to locate the high producers, then to place them in the breeding pen. You will see they worked under the impression that by hatching from high producers they would get high producing offspring. In other words, if by trap nesting for a year they had determined that a certain individual had produced 200 eggs, and they placed her in the breeding pen, mated properly, they had a right to expect offspring also laying 200 eggs. Did this work out? Let us see some of the results.

They started with a flock that averaged about 120 eggs per hen per year. Seven years' breeding, according to their method, raised the productivity from 120 to 144 eggs per hen per year. So far so good. Seven more years of such breeding lowered the productivity to the original productivity of the flock 14 years before. Therefore, the experiments were considered a failure, yet at the same time they taught us very much. They proved that not every high producer is a reproducer. They made the mistake of breeding from a large number of abnormal layers, which had the tendency to produce constitutionally weak offspring. They lost their end in view through lowering the constitutional vigor of the flock, and by wrong rules of breeding.

We have occasionally noticed that rare individual birds laying 300 eggs per year were worthless as breeders. Their eggs were very infertile, low in hatchability, the chicks were weak and hard to raise, and constitutionally weak when mature, and thus physically unable to produce a large number of eggs.

Since that time the Maine Experiment Station, under Dr. Pearl's supervision, has bred along different lines and we are looking for some very interesting results. They make it a practice to trap nest the parent stock and the offspring, and thus find those individuals in the flock that have proven reproducers of high producers, and that is what we must know. We want only such individuals in our breeding flock for increased egg production as have been proven reproducers of high producers. In other words, a pullet

or a hen that lays 200 eggs a year, the offspring from which, by trap nest record also lays 200 eggs, is the hen for your breeding pen. She is a known or proven reproducer of high producers.

At the Maine Experiment Station they have also proven to a certain degree that the prepotent male, in egg laying qualities, is one of the most economical and quickest ways of increasing the productivity of a flock. A male with a pedigree record and one that is prepotent, is the best means of the farmer with which to increase the productivity of the flock.

It is to be hoped that before long we will have a number of breeders for each breed that make it a business to produce officially pedigreed males—males that have a record similar to the records to be had when buying a good bull to head the dairy herd.

POULTRY PROBLEMS

Poultry raising is recognized as one of the leading enterprises. Scientific and progressive poultrymen devote considerable time and thought to various branches of this important industry, realizing that the largest returns from their investment are due solely to its management. Methods of feeding, and, in fact, every detail is given strictest attention.

To win success, provide every opportunity that will insure results right from the start. The first problem of the poultry industry begins with raising baby chicks. The poultryman should be extremely careful in securing high-grade stock, as the outlook for future success depends considerably on this important factor.

In the selection of foods, experience has proved that prepared dry green chick foods insure healthy, vigorous chicks. Containing ingredients proportioned to provide the most nourishing elements, the baby chicks are given an excellent start in life.

After six or seven weeks, having outgrown baby food, and being desirous to continue their rapid growth and prepare them for their future, a growing chick food is selected, especially prepared so as to make the change of food gradual, in as much as radical changes should be avoided. This food can be fed dry or as a mash, mixed in a crumbly form.

The last subject in the feeding problem, but one which should receive the poultryman's most careful attention and consideration, is "food for hens." Prepared balanced rations are daily being adopted by progressive poultrymen, as they are considered far superior to former methods of feeding.

The ingredients of this mash, known among poultrymen as egg food, furnish a better assortment at a cheaper price than the poultryman can provide. In former years poultry were allowed considerable free range, which enabled them to search for the various food elements they require. As many poultrymen prefer to keep their fowls in pens, so that the egg yield may be closely watched, naturally this method decreases the opportunity of the hens to secure the proper variety, hence the necessity of a well-balanced ration.

The poultry industry can be a pleasant as well as profitable venture, and it is to the poultryman's interest to study the "feeding problem" carefully, in as much as the success of the investment depends largely on feeding methods.

BROODY HENS CUT EGG PROFITS

Now that the hatching season is under way the poultry raiser will be interested not in persuading hens to sit, but in breaking them up. Broody hens greatly reduce the egg yield and in this time of egg shortage it is important that each hen be kept busy. It is a mistake to let them sit simply because they want to. If they are allowed to follow their inclinations they

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will sit indefinitely. If they are broken up they will begin laying again in about ten days, provided that they are in good condition.

Such methods as dipping the broody hen in water are useless in breaking her up, and they may impair future egg production. As soon as the hen shows signs of broodiness she should be removed to a slat or wire bottom coop. She will be easier broken up at first than later. Broodiness is quite largely a state of mind. If the broody coop is put where the hen can see the rest of the flock she will grow restless. After four days, let her return to the flock. By this time she will have changed her mind and will go back to laying. Be sure to feed her liberally while in the coop, for laying hens must have a surplus of fat. A hen in poor flesh rarely lays. A little attention to the broody hen will make a great difference in the looks of the balance sheet. In these days of high priced eggs it is important that the hen take as little vacation as possible.

MANURE PILE HARBORS FLIES

The preferred food of house fly larvae is horse manure, in which they breed in untold numbers. More than 1,000 house flies will issue from one pound of manure. Flies are sure to swarm from unprotected manure piles.

Early spring is the time to begin operations against the fly and one of the first steps is to properly dispose of the manure piles that have accumulated during winter. In small towns and rural districts it is quite easy to dispose of such piles. In large cities the problem is more difficult.

Since horse manure is a valuable fertilizer it may be disposed of to advantage on the garden, lawn or field. Application should be made without delay. In this way the breeding place of flies can be eliminated and crops can be benefited. A fly-tight bin or pit for the temporary disposal of manure is recommended. Manure should not accumulate even in such containers. It should be removed and scattered on the field at least every two days, so that the larvae, if present, will not have time to mature.

FARM WORK SHOP

The work shop on my farm has enabled me to employ my time more profitably in seasons when my other work has been light. By inspecting and repairing my tools and machinery I have prolonged their life.

The upkeep of my tools and implements has been the big economy. Many persons will buy an expensive piece of machinery, use it one season, and then leave it exposed to the elements during the winter. When they want to use it again it has lost from 10 to 25 per cent of its efficiency. Proper housing of the tools and implements will prevent this depreciation. Although I find the question of housing is important, it is equally important that the defective and broken parts be repaired.

To make these repairs it is necessary to have a work shop, unless you take everything to town to be re-

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paired. This work shop doesn't need to be very large. It should be sufficiently roomy to allow for a work bench, a stove and an amount of floor space large enough to accommodate the machinery or tools while they are being taken apart and reassembled.

The equipment in my work shop isn't elaborate. I have a small emery grinder and a few of the common tools that a carpenter or a blacksmith requires, with some paint and a brush. While I have a portable forge and an anvil, and they have proved good investments, they are not absolutely necessary.—Farm and Fireside.

IMPLEMENTS USED IN CULTIVATION

The importance of cultivation and the implements with which we work the land cannot be over estimated. In this state moisture and length of season are two of the chief governing factors of agricultural production and both of these factors can be influenced more or less by cultivation. For instance the working of the land in the spring warms it up and hastens the growing time and this same working established a soil mulch on the surface which prevents evaporation. But there is more to cultural operations than merely establishing a soil mulch. Upon them depends the success or failure of every crop and upon the implements they are performed with depends the cost of operation. Perhaps it might be well to review a few of the implements and methods practiced on many farms.

Plowing is admittedly the foundation operation of all crop production. Plowing has been performed with many different kinds and styles of plows. No definite rule can be laid down as the best method of plowing. One safe rule, however, is to plow only when the soil is in shape, that is, when it is not too wet; this rule, of course, applying to heavy soils only. Plowing deeply in autumn, turning an upstanding furrow, and plowing shallow in spring, turning a flat furrow is another general rule that is applicable to more of a variety of soils than the first. Probably the cheapest plowing done by horses is to plow with a two-furrow gang plow, using four or at least three horses. Disk plows afford a means of performing this operations at times and under conditions where it would probably be impossible for the common mould-board plow to operate, as for instance plowing heavy clay lands when hard and dry. They are also useful in burying manure, grass or weeds and in exposing heavy soils to the action of the frost, since they leave a very rough surface exposed to the air. Subsoil plowing is a cultural operation very seldom practiced in ordinary farming. It might be that it would pay better were this operation more generally performed, for it serves to open up the upper subsoil and so increases the water holding capacity of the root holding soil strata.

Many implements have been devised and put on the market wherewith to perform the operation commonly known as harrowing. Of all these implements the disk harrow is probably the most generally useful and most effective in the work of preparing the soil for seed after it has been plowed. The larger the disk and the more acute the angle at which it is set in operation the more effectively will it work. To insure good work, however, with a large, sharp-set disk, rolling is helpful in order to crush the soil down that it may remain in place when being carved by the disk. The common spike-tooth harrow is as widely used as the disk and where the object is merely to stir the surface of the soil, and not thoroughly cut it up, its use is better than the disk, for the power required to cover a given amount of ground is far less. In establishing a soil mulch on the surface and in killing newly germinated weeds the spike tooth harrow is most useful. There is another type of disk harrow, known as the double cutaway that has proven an excellent implement though as yet it is not widely used. It consists of two disk harrows, one in front of the other, cutting, the one with an inthrow and the other with an outthrow; the disks are so placed as to prevent their running in the same track, hence much the same effect as double disking is secured. Considerably more power is required to operate this than the single disk. The spring tooth harrow is an implement useful on rough land where rocks are present. Many people condemn its use, but others claim for it great results. Harrowing is an operation usually indifferently performed. Good plowing is a necessary condition for

To Buy

the best crop results, but thorough harrowing is indispensable. Thorough harrowing does not necessarily mean many different harrowings, but it means such treatment as leaves the surface of the seed bed smooth and friable and the bottom of the seed bed firm and solid. Until these two conditions are fulfilled the harrowing should not stop.

Seeding is now rarely done by hand. In some districts, however, broadcast seeders are still used and these are not nearly so satisfactory as drills. Much of the seed broadcasted is insufficiently covered while the rest is buried too deeply. Naturally the resulting stand is uneven. The disk drill for small grain and the grass seeder attachment make the best implements for planting the crop, for they insure a given rate of uniform planting and a thorough covering of the seed at the desired depth. In buying a drill as large an implement as possible should be selected as this materially aids in reducing the cost of crop production.

The roller is not generally used. Indeed the worth of the implement should give it a wider application to farming. Among those who use it it is looked upon to give the finishing touch. It is just at this point that the danger lies. It is as an operation after seeding that the roller is of the least value. There are, of course, conditions where it is desirable to roll after seeding, but the true value of the implement lies in its usefulness as a means of preparing the land for the crop. The use of the roller in preparing sod land is much to be commended and it is here that this implement is of the greatest value to the farmer. In pressing the furrow slices flat, that they may come in direct contact with the subsoil, the roller performs an operation that is of inestimable value in re-establishing capillary attraction and thus furnishing water for the crop. In driving and pressing out the air spaces beneath the sod the roller aids materially in retaining moisture in the soil. No land should be rolled after seeding if the surface is at all damp. The surface should be allowed to dry a few days before the roller is put on. Rolling in this way after the grain is up breaks the crust, forms a mulch and so helps to preserve the soil moisture. On light, dry soils rolling is an essential operation after seeding to insure quick germination. Here, again, however, it is often advisable to roll again lightly after the grain is up.—Exchange.

CULTIVATION OF BEANS

By John Fox.

Sufficient cultivation should be given to keep the surface soil loose and prevent weed growth. Weeds not only retard the crop development, but if abundant seriously interfere with harvesting. A harrow or weeder may be used when the plants are young if the soil is not too moist, and the plants are dry. Beans should not be cultivated when the plants are moist as they are more brittle and break easily at this time. This not only reduces the stand, but injured plants are more susceptible to certain diseases. The first cultivation may be comparatively deep, three to four inches, as the young plants will not have extended their roots far at this time. This loosened soil will tend to make the roots form below it. Later cultivation should be somewhat shallower to avoid any destruction of the roots.

Irrigation

Where beans are grown under irrigation, care should be taken not to give too much water. On rather heavy loam soils two irrigations have given better results than a greater number of irrigations. Soils which have a lower water holding capacity will probably need more frequent irrigation. When the plants have a dark green color and wilt during the heat of the

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For \$75.00 an acre you can buy 50 acres of Elberta's fertile land, with prior water right at \$1.00 an acre. What do you think of this buy. If you are looking for a small farm at a low price, investigate this further. We will be glad to furnish you with more information.

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day, they are in need of water. Water should not be applied after the blooming season under ordinary soil conditions. Later irrigations are apt to prolong the growing season and endanger the crop from frost before it is ripened.

To Sell

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Now is the opportune time to buy farms. We sold more farms last week than in any other week in our entire business career. People are realizing the necessity of buying farm lands. While prices are so high they may be able to pay for the farm in a very short time. It is up to the people of this country to feed the entire world for a few years to come. If you are interested in getting a farm that will pay for itself soon, we have the following to offer:

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On 14th South, just off the 5c car line, we have some beautiful one-acre tracts for sale. \$450 per acre, \$45 down at time of purchase and ten years on the balance at 7 per cent interest. This is a good buy. If you are looking for somewhere to raise your foodstuffs, it cannot be beat.

In southern Idaho, on the main line of the Oregon Short Line, we are selling 40, 80 and 160-acre tracts of land at from \$50 to \$100 per acre, including improvements and crops. This land can be had on ten years' time at 6 per cent interest, with a small payment down.

A number of weeks ago we took over the entire holdings of the Keystone Steel & Wire company of Peoria, Ill. This land is situated in the Bear River valley, right adjoining the town of Tremonton, one of the nicest little towns in northern Utah. This land consists of 40, 80 and 160-acre tracts. We have one or two of these pieces of land left.

We have just bought 800 acres of land in Cache valley that is one of the finest farms in that valley. We are going to cut this farm into 40 and 80-acre tracts, to be sold on easy terms. Part of this land is in alfalfa, part of it in grain and the balance ready to be planted to sugar beets or other crops. All fenced, water piped, so it can be had for each 80 or 40 acres; on the main line of the railroad, and the county road passes through this farm. We will sell this land and you will get five tons of alfalfa per acre a year. At the present price of alfalfa and other crops, this land will pay for itself in a very short time. Prices range from \$100 to \$150 per acre, including water right and improvements. We will sell you from 10 acres to the entire tract.

We exchange farms for Salt Lake City property.

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Salt Lake City, Utah
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FREE FARM LANDS
The Pöhoñt Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our Committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah.

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For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

BARGAIN

One 28-inch Minneapolis Separator with self-feeder and wind stacker, and one gasoline tractor at a sacrifice. Both in good condition.

SAM PETERSON & SONS CO.,
147 S. State St., Salt Lake City, Utah.

WANTED to hear from owner of good farm for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

GROWING OF BEETS IS BENEFIT TO YOUR FARM

Besides providing an absolutely cash crop, a certain market, the growing of sugar beets, the Utah and Idaho, also provides one of the best means of fertilization through crop rotation. Agricultural experts agree that root crops are essential in good farming—sugar beets provide the safest, surest, cash producing crops of its kind.

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40% Discount on Eggs

for hatching for balance of season, from Four Best Laying Strains Rose Comb R. I. Reds and White Wyandottes, Single Comb Black Minorcas and White Leghorns. Egg Fertility Guaranteed. Call or Write

E. C. BLANPIED,
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SAVE MONEY ON YOUR LUMBER BILL. WRITE US. PACIFIC COAST SAWMILL COMPANY, Portland, Oregon.

Hatching Eggs 20% Off.

A few White Leghorn Breeders at half January prices.

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Provo, R. F. D. No. 1, Utah.

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We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

Prices at your postoffice:

100 Butter Wrappers.....	\$.90
200 Butter Wrappers.....	1.25
500 Butter Wrappers.....	2.00
1,000 Butter Wrappers.....	3.00

Check or money order must accompany order.

VALUE IN MANURE

If she is properly fed, a cow will drop about five tons of manure during the half dozen months of winter and spring; and the manure is worth about \$2 a ton. A very large per cent of the value of manure is in the liquid portions, and on the average farm this is largely wasted. It is not necessarily so. The average farmer has plenty of straw and other waste that could be used as absorbents and take up the greater portion of the liquids, and thus get their full value.

Every good farmer has (or should have) a manure spreader; and when he cleans out his stable he can just as well throw the manure into the spreader as out into the open yard; and when he has a load he can hitch up and take it out to the field and spread it. The question arises, "What field?" Your pasture or meadow, of course. This applies to the manure of cows as well as of horses; and there is no reason why, except in the most se-

vere weather, the daily yield of manure should not be out on the meadow or pasture within 24 hours. Under these conditions the waste is merely nominal.

Someone will say, "Why not apply it to grain crops? Why not wait and apply it to corn?" Simply because the very best place on which you can put manure is on pasture or meadow land. We are told by a good many agricultural papers and teachers that this is all right for flat land, but on hilly land there will be an enormous waste. Don't you believe it. Of course, rains will come and wash out the soluble portions and gravity will carry them down hill, but if you watch closely you will see from the discoloration that very little of it ever gets off the farm. The waste from washing or rolling land is only a mere fraction of the waste that comes from lying in a pile in the yard.

When you see a manure pile smoking you may know you are losing the value out of the manure. When you smell ammonia in the stable, you know there is waste going on, waste which can very easily be checked by using gypsum, which is cheap and can be kept handy. The worst thing you can do with manure is to throw it out through the stable door under the eaves and let the rains wash out everything except the coarsest, poorest material. It is not possible to save all the value there is in this manure, but a much greater per cent of it can be saved than there is now.

It depends a good deal on the way you feed your livestock. We have known men to build hay sheds in which to store their hay and then put sheds around that, leeching their cattle in these sheds, and letting them tramp the manure into a solid mass. This could stand until summer with very little waste. The only thing to do with the open shed is to haul out the manure whenever you can, and under no circumstances allow it to remain from spring to fall. This last means inevitable waste.

Figure the value of the manure from twenty cows and see if you don't have a real gold mine on every farm. The time is coming when we may have to feed cattle for the manure, suggests a well-known writer.—Pacific Homestead.

COMMON FARM WEEDS

Burdock (perennial). Propagated by seeds in fields, destroyed by cultivation. In lawns, permanent pastures, by-places, lanes, etc., cut with spade. Care must be taken to cut below crown. This may be done at any time before plants go to seed.

Ox eye daisy (perennial). Branching habit of growth. Grows in all soils, thrives best on loose soils. Distributed by seeds. Change rotation, dropping out meadow until infested fields are rid of pest. Plow up area and plant to cultivated crop. After harvest and late autumn cultivation, followed by spring cultivation, cultivated crop should be followed by grain crop seeded to grass. In permanent pastures, repeated mowing each season for a number of years will finally conquer the weed. Avoid blossoms going to seed. Blossoms and seed unless plants are cut down will occur into the late fall.

Canada thistle (perennial). A bad weed, widely distributed in northern states. Grows from one to two feet in height. Creeping underground stems, flowers purple or crimson. Blossoms in July or August. Propagated by seeds and creeping root stocks. Avoid in rotation all crops that will allow this seeds to ripen before cut. Practice fall plowing and spring cultivation followed by cultivated crop. Cut

Duroc Jersey Boars

Boars chuck full of Grand Champion Breeding. Bred the same way as our Utah State Fair Winners. We have a great lot of top spring Boars and are offering them at bargain prices. Every Boar guaranteed to please or money refunded. Write us today.

RICHARDS LIVE STOCK CO.
Virginia Idaho
The West's Best Durocs.

thistle in full bloom in July. Follow with shallow cultivation and seed ground heavily with Hungarian grass. Plow under crop or save for hay. Seed to rye. Turn under rye in May, following spring and plant cultivated crop. Eternal vigilance is the price of success. In permanent pastures spading or by frequent mowing with scythe or mowing machine is helpful.

Buffalo bur (annual). Commonly called "sandour" on plains of West. Easily destroyed by cutting off the young plants below the ground before pods are formed. If plants are well advanced in growth, cut, dry and burn.

Milkweed (perennial). Troublesome weed not only in meadows, but in grain fields, two to five feet high. Follow methods given for eradication of Canadian thistle.

Morning glory (perennial). A very bad weed, deep rooted, stem creeping like the horse nettle and Canada thistle, it propagates freely underground. Destroyed by same method as Canada thistle.

Cockle bur (annual). From one to three feet high. Propagated by seed which have strong vitality. Where cockle bur occurs in clover or meadow grass frequent mowing will keep it under control. The great danger is in letting weed go to seed. Use scythe or mower freely. Where burs occur in stubble fields mow before plant goes to seed.

Horse nettle (perennial). Propagated by rootstalks and cultivation often spreads rather than destroys it. Continued mowing or seeding ground to clover will prevent development above ground and so starve the roots.

Russian thistle. Burn stubble after harvest to destroy seeds. Put cultivated crops in rotation.

A RACK FOR GARDEN TOOLS

By J. W. Groves.

Did you ever hear some member of your family asking the whereabouts of some garden tool? Do you know that the nerve strain incident to hunting five minutes for the hoe causes more actual fatigue than twice that much time spent working with the hoe would cause? The best way to keep tools of this kind in place is to have a place to keep them. One very good suggestion as to such a place is to arrange a board, which has holes cut in it, so that the handle of the tool may pass through a hole in the board and the tool be held in an upright position.

When such an arrangement is made it should have only as many holes in it as there are tools to be kept in place. Then the rack should be stationed where it may be seen every time one steps out the back door. After the habit of keeping the tools in place has been formed it soon becomes painful to pass the rack and see that a tool is missing. To carry out the principle of keeping things in place at all times except when in actual use is a matter of great convenience to the grower, and one that will mean dollars in his pocket in a period of a few years.

WANTED Beet Laborers

The Delta country offers exceptional opportunities to farm hands. A good, clean soil; good water and splendid citizens. A new sugar factory at Delta, Utah, is growing 10,000 acres of sugar beets and NEEDS BEET THINNERS AND FARM HANDS. The growers will contract at the following prices:

Thinning, etc., per acre.....\$ 7.50

Hoeing, etc., per acre.....4.00

Topping, etc., per acre.....11.50

With extra pay for all over twelve tons per acre. FARM HANDS CAN GET FROM \$2.00 TO \$2.50 PER DAY AND BOARD. The Delta country is DRY TERRITORY, a splendid place for school boys to spend the summer months. Write the Delta Beet Sugar Corporation or the Delta Commercial Club, Delta, Utah.

BEES ARE HELPFUL TO OUR ORCHARDS

By Dr. J. H. Merrill.

The presence or the absence of bees in the orchard often means the difference between success or failure with the crop. Many of the varieties of strawberries absolutely depend upon insects for cross pollination. Among apples some varieties depend wholly on insects for fertilization, and even those that are self fertilized are improved by the transference of pollen from other blossoms. Some fruits in which pollen is normally distributed by the wind could not produce much fruit if the wind did not happen to be favorable at the time of blossoming. When bees are present the direction of the wind is immaterial.

The old method of leaving the bees in a single-walled hive and allowing them to be exposed to the rigors of winter has been detrimental to these insects. The length of the life of bees depends on the amount of work they do. During the winter if the bees are housed in the manner mentioned, they form a cluster when the temperature falls and try to keep warm by muscular exertion. Consequently, many of them die and those which survive are in a weaker condition in the spring.

One of the best methods of wintering bees outdoors is to cover the hive with a packing case and fill the space between the hive and the case with some packing material—cork, hay or sawdust.

In the summer the honey harvest may last but a few days or a few weeks and the apiarist should be prepared to take full advantage of this honey flow.

In the fall, after the honey flow ceases and the supers are removed, preparation should be made for carrying the bees over winter. These should have 25 pounds of honey to each colony to last through the winter. If the bees have not enough food they should be fed until they have laid by sufficient stores for the winter.

Often complaints are made that the bees injure fruit in the fall. Anyone

who has studied the mouth parts of the bees knows that it would be impossible for them to puncture fruits. Experiments show that while bees do suck fruit juices from injured fruit, they will not damage sound fruit. Furthermore, they will not use these juices if other food can be obtained.

Bees are indispensable for the horticulturist. While the majority of beekeepers keep only a few hives, there are a number of scientific beekeepers whose only source of revenue is derived from apiculture.

Bees seek out their own food and whenever this is available in the field, man is never called upon to provide anything extra. In gathering nectar, they not only fertilize the blossoms, but gather large quantities of honey for their own use as well as the use of their keeper. As food producers, they stand alone both in quality and economy.

Advice on Bees

Bees are indispensable to horticulture.

Bee culture is not only profitable, but an interesting occupation.

A successful beekeeper is well paid for time spent; he gets a quick return on his investment.

Bees may be kept anywhere—on the city roof, in the village backyard, or in the garden on the farm.

Beekeeping may be followed by man or woman, by rich or poor, by young or old.

An awakened interest in honey production is in evidence in Kansas.

THE WASTEFULNESS OF SWARMING

The old-time beekeeper boasted of the number of swarms which issued from his hives, but the modern beekeeper knows that swarming is one of his worst obstacles to producing a large crop, according to bee specialists of the United States Department of Agriculture. The modern beekeeper knows from experience that after he has given all his energy to getting every colony as strong as possible at the beginning of the honey flow, he

must not permit the bees then to spoil it all by dividing their forces.

Of course it is impossible to do anything toward controlling swarming when the bees are in a box of "gum," and this is the chief reason why bees in a movable frame hive are more profitable. It is also unfortunately true that in spite of the beekeeper's most strenuous efforts, colonies will sometimes swarm. In that event the beekeeper makes the most of a bad situation by keeping the forces together in another way.

If swarming occurs when honey is coming in, the hive should be at once removed to a new place and a new hive placed in the old location. The swarm is now hived in this new hive and, because it is in the old location, all returning field bees from the colony join the swarm and the population is kept up. Later on there are various ways of reducing the parent colony still more, for by this means the issuing of worthless after-swarms is prevented.

The beekeeper who desires to get the greatest possible crop does not permit even one swarm to issue if he can help it. When swarming time arrives he examines every colony once a week. If he finds queen cells with eggs or small larvae in them he cut every one out and thus makes it necessary for the bees to build other cells, if they still persist in their efforts to swarm. If, however, he finds larger cells with old larvae he knows that the impulse to swarm has developed too far, so he must satisfy it in some way. He may make an artificial swarm—at his convenience and not at that of the bees—or if he is a producer of comb honey he may cut out all the queen cells and cage the queen for ten days until they get over their "swarming fever."

The skill of the beekeeper can usually be measured by the results of his work in curbing swarming. The poetry which others see in issuing swarms is entirely lost on a good beekeeper.

TOMATOES A GOOD CROP TO GROW

If in doubt as to what crop should occupy extra space in the garden, plant tomatoes. As a vigorous grower, a high yielder, and a vegetable which can be completely utilized—both fresh and canned—the tomato is outstanding among its garden neighbors.

Tomatoes may be transplanted in the garden at any time after the danger of frost is past. The gardener who has not provided plants should make every effort to secure a supply of standard varieties from a neighbor or commercial grower.

If a uniform supply of fresh tomatoes beginning at the first ripening and lasting until frost is desired, it will be necessary to plant several varieties.

The larger varieties of tomatoes should be set at least four feet apart each way. The smaller ones may be set at two foot intervals in rows three feet apart. Stocky plants of mature size should be used and should be set somewhat deeper in the soil than they stood in their previous location. If the soil is dry a cup of water should be used for each plant, but care should be taken to cover the puddled soil with loose dirt to prevent evaporation and baking.

Cultivation should begin as soon as the plants are set in the soil and should be continued as long as the vines will permit. Moisture, when deficient, can often be profitably supplied. Care should be taken to stir the soil after each rain.

The yield of tomatoes can often be increased and the picking season lengthened by pruning and staking the vines. They are usually pruned to two or three stems and are then tied to stakes or trellises with soft material which will not bruise the plant. The pruning begins when the plants are from 12 to 15 inches high and two or three runings and tyings are usually necessary. The quality of fruit from the staked plants is greatly improved as it is less subject to disease and decay.

Excursions East

via



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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

VOLUME XII, NO. 46

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH

JUNE 23, 1917



Plenty of Shade, Pasture and Water

SUGAR BEETS

FERTILIZING THE SOIL

By J. C. Wheelon.

"But sweet vicissitudes of rest and toil
Make easy labor, and renew the soils.
Yet sprinkle sordid ashes all around,
And load with fatt'ning dung thy fallow ground."

—Virgil.

How to restore and maintain the productivity of the soil is the most important phase of the present agricultural problem. We are no longer a new nation. We have deluded ourselves with the idea that we have unbounded resources in land, in forests, in mineral wealth. We have been prodigal in the utilization of these resources. We are already beginning to pay the penalty of this prodigality. In many of our older communities soil fertility has been reduced below the point of profitable production. Nation-wide effort at the present time, through federal and state agency, is directed toward the restoration of fertility in those localities as well as to the maintenance and increase of the fertility in the newer localities.

The history of "Farmers of Forty Centuries," in the Orient, by Prof. King of Wisconsin, gives us a vivid picture of the successful application of manures, good tillage and rotation. For 4,200 years the fertility of those lands has not waned, but increased, and today are producing four and five times as much as the soils of our own country, and the farmer who is in earnest and takes his profession seriously should be so impressed by the necessary attention to fertilization from a business standpoint that he would not ignore a single feature which has wrought such remarkable results.

Those results were, and are yet, obtained by the use of manures, and we have all the facilities for obtaining the best results from the use of manures that they possess, and we always will have them until the laws governing plant life and the formation of plant food compounds are changed.

They learned the art of farming, but did not know the science. We have the art and with the knowledge of the science that is available to the farmer of today we do not have to wait for centuries for results; we can tell before we apply the fertilizer today just what it will do because we can analyze the soil and the fertilizers and get results quickly.

We can go farther than that. We have learned that some crops carry away from the farm to the market more of the essential plant foods that go to help produce another crop than some other crops do, and by selecting those crops that return to the soil, or leave a residue of refuse that can be applied to the soil to give more assistance in the production of another crop of the same or any other variety, we are able to keep up the producing power of our land and by the use of manures increase its productiveness from year to year.

In discussing the "growing of sugar beets for profit," we propose to avail ourselves of this last proposition, and we assert with every confidence that there is no crop with which we are familiar that will produce so much money per acre and take to market so small a proportion of the plant foods required to produce itself as that of sugar beets. We will go farther and say that there is no crop that will respond to the intelligent use of the most economical processes or rebuilding the soil as that of sugar beets.

One of our farmers prepared a suitable field for sugar beets that has been in dry farm wheat for fifteen years; he applied five loads of barnyard manure per acre to this land and secured water for irrigation. His first crop yielded 12½ tons per acre. In 1914 he harvested his seventh consecutive crop of sugar beets from this land; he harvested 22½ tons per acre

and the process is as simple as A B C. He plowed under all the crowns and leaves left at the beet harvest, and applied the annual production of his stock in manure which gave him about five loads of manure per acre for this field. This man has been a farmer all his life. He tells me that he was struggling under heavy interest obligations and this has been a revelation to him; he has paid his debts and built a house. He firmly believes there is no crop in existence that is so responsive to good tillage and cheap fertilizer and at the same time return such handsome profits as sugar beets. He plows deep and often. You cannot find any solid vegetable matter in his soil; it is all so mixed and decomposed that the only evidence of soil power is in its deep, rich, brown color showing abundant humus content.

Another neighbor planted his first beet crop of 38 acres on an alfalfa field thirty years old. The field was near the home buildings and a good deal of winter feeding had been done on this field. During the season when the ground was frozen the horses and cattle were fed on the field by spreading hay on the snow. The alfalfa began to get thin on the ground; the tramping of stock for so many winters had killed the hay in many places, but the deposit of vegetable mould on the surface by the feeding and dropping of the livestock was enormous. The gradual killing of the alfalfa had resulted in the decomposition of countless roots and stems.

It required many plowings and discing to make a seedbed of this old field, taking most of the previous season to prepare the ground.

The first crop yielded 25 tons per acre; the next year the field produced 35 tons per acre on the average of the field, and earned for the owner the "Havemeyer prize," for the largest yield on the largest field. The United States competed for this prize and it was won by a man who understood how to profit by the use of the cheapest fertilizer known to agriculture, "barnyard manure." This man is now raising his fourteenth consecutive crop on this field and is still "growing sugar beets for profit." He has pastured off the leaves and crowns of his crop every year and has applied about six tons of barnyard manure per acre on the land. The yield of this field has decreased gradually until this year the estimate on his harvest is about sixteen tons per acre.

The point we desire to make here is, that the first neighbor made a competency raising sugar beets and at the same time built up the fertility of his soil, while the second neighbor made not only a competency, but he made a comfortable fortune raising sugar beets because he selected land that contained a vast fund of fertilizer to begin with, and both men achieved this on less than 40 acres each.

We asked the second neighbor what he thought his harvests would have been if he had plowed under his beet tops every year in addition to the manuring. He said, "I expect to plow under the beet tops from now on in an effort to demonstrate how many years it will require to get the soil back to its former maximum yield by the use of the beet tops and the application of the six tons per acre per year of barnyard manure."

This land in its virgin state was no better than the land contained in any good valley in the inter-mountain country, and this field, less than forty acres in extent, has returned a gross revenue of over \$60,000, and is now asked to duplicated the record all in the period of one man's active farming career, and this, too, accomplished by the most economical process of tillage and fertilization, not a pound of commercial fertilizers or other spe-

cial stimulants has been applied to this soil.

Most soils, of themselves, will produce enough to "keep soul and body together" for the owner, but the profits are upon the work we put on the soil and the fertilizer we put into it.

I believe we can analyze this proposition of fertile very briefly and yet in a manner that can be readily understood.

We know that nitrogen is at once the most important, the most expensive, and the most elusive of all plant foods. We know also that nitrogen is held in compound with humus, phosphoric acid and potash. We also know that in order to hold and convey to the soil and retain therein this important element of nitrogen we must apply a compound that contains the other three. Therefore, to simplify our analysis we will confine our remarks principally to this one element.

At the beet sugar factory at Salinas, California, the company operated for a number of years an agricultural laboratory. The average of a number of tests shows that a twenty-ton beet crop extracted from the soil 172 pounds of nitrogen and that when the beet tops were plowed under 118 pounds of this nitrogen was returned to the soil in these tops as a fertilizer. This leaves the soil deficient in nitrogen to the amount of 54 pounds per acre. How can this element be returned to the soil in the most economical manner?

Nitrogen, when purchased in the commercial fertilizers, such as are advertised on the markets, will cost at our railroad stations about 20 cents a pound and will cost us about \$10.80 per acre. We will see if this cannot be furnished much cheaper.

Barnyard Manures

We will classify manures as follows:

Green manures (plowing under green crops).

Commercial fertilizers.

Dr. W. E. Taylor, director of the John Deere Soil Culture Department, in his bulletin, "Farm Manures and Fertilizers," tells the average barnyard manure contains per ton:

10 pounds of nitrogen.

6 to 7 pounds of phosphoric acid.

12 to 16 pounds of potash.

Therefore, six tons would contain:

60 pounds of nitrogen.

36 to 42 pounds of phosphoric acid.

75 pounds of potash.

It is generally conceded that the cost of applying manure on the land is confined to the hauling and spreading.

Dr. Taylor has made numerous trials to determine the cost of hauling and spreading manures. He classifies the methods as follows:

Method A—

Unloading the manure in piles and then spreading it on the land.

Method B—

Spreading the manure from the wagon.

Method C—

Spreading with manure spreader.

The result of his trials are shown as follows:

Method A cost 44 cents per ton or load.

Method B cost 40 cents per ton or load.

Method C cost 20 cents per ton or load.

Which shows that six tons of manure cost, to spread ready for the plow, from \$1.20 to \$2.64 per acre; it carries to the soil \$12 worth of nitrogen besides a balanced ration of humus, phosphoric acid and potash, which are easily worth half as much as the nitrogen; and one man can do this in one day, pay himself top wages and pay for a manure spreader every thirty days. Remember, we don't look for profits in just "framing land," we get the profits from the work we put on the land and the fertility we put into it.

Send your order for butter wrappers to Utah Farmer.

THINNING AND ITS INFLUENCE ON SUGAR BEET YIELDS

"Thinning" is one of the most important operations of the entire sugar beet culture, and unfortunately many of our farmers have not given it sufficient consideration.

If we compare the average yield secured on the land of the European countries with those obtained in this country we find that our yield is considerably less than that of France and Germany. The average yield of 1914 in the United States was 10.06 tons per acre, as compared with 14.17 tons per acre in Germany and 12.50 tons per acre in France.

It is not altogether a question of the difference in soil and climatic conditions. These conditions may influence it some. From careful observations, however, many reports have been made and the majority agree that in most cases it is a poor stand that is the big difference between our beets and those of Europe.

It has taken them a great many years to learn how to successfully thin their beets. The careful attention to the small details of thinning will pay a big profit at harvest time. Foreign laborers are requested to select the healthiest beets of the bunches, and, while holding same with the left hand, pull up with the right hand the remaining beets which are placed in windrows, gathered by children and used as fodder. These thinners also destroy all the weeds not killed by the horse cultivators or by the hand hoes. They must perform all this work with their hands; no tools of any kind are permitted.

In this country this delicate work is not performed in the same careful manner as just described, but in most cases this important work (in fact the one upon which the results of the entire crop largely depends) is left in the hands of disinterested laborers. Many of our farmers are not able to watch the man who contracts and does the thinning of his beets, and because they are not directly interested in the results of the crop, often the thinning is not done as it should be.

A man who owns a large acreage of beets should spend more of his time in the field while the thinning is going on. Personal supervision would mean better and more even stands, fewer weeds and a greater tonnage per acre.

Beets should not be thinned too early. Thinning should be done when four leaves have grown, not counting the seed leaves. Beets should not be thinned when they have only two leaves, because at this stage you will not be able to determine which will develop the strongest beet plants.

The farmer who knows his soil will be able to determine the exact distance that beets should be left apart, as the more fertile the soil, all other conditions being favorable, the closer the beets should be thinned.

The agricultural superintendent will be able to help determine the average distance of beets for each field. The general average, as given by the sugar company is the only plan to follow, except in unusual conditions, such as very fertile land.

Beetgrowers fail to realize the significance of apparently small deficiencies in the stand. It is absolutely important that they do not fail to watch the thinners and convince themselves that the work is being done right and devote more time to the supervision of the thinning. By doing so the growers will soon find out that their fields will be better spaced; that there will be less double beets; less weeds, and the time spent in the field overseeing this most important operation of the entire beet culture will be largely compensated by a considerable increase in yield.

TO REMOVE PAINT OR VARNISH FROM GLASS

Paint or varnish, on windows, that has dried and will not rub off, can easily be removed by washing well with wood alcohol. Also, it will remove paint from woodwork.

Alfalfa As a Basis In Rotation

By F. S. Harris, Director Utah Agricultural Experiment Station.

The value of alfalfa as a forage crop has been recognized ever since the settlement of the West. It was planted in pioneer days and on account of the high lime content of most Utah soils, it grew vigorously and made possible the raising of a great many livestock. Without doubt alfalfa has been one of the factors that has contributed most to the rapid growth of the West.

During the early days farmers acquired the habit of raising alfalfa almost continuously on the same land. The crop was profitable and they saw

no reason for changing it. The alfalfa patch was not usually plowed up until it was run out by weeds or until the original crop was nearly all dead.

I wish at this time to emphasize the importance of alfalfa as a crop in a regular rotation for Utah and other Western states.

These states have not as yet worked out systems of rotating crops such as are practised in the older settled regions; but the time is ripe when such systems should be start-

ed. The control of crop diseases and insect pests, the eradication of weeds, the conomical use of machinery and labor, and the conservation of the fertility of the land all demand a cropping system that will meet these conditions.

Rotations usually have a hay crop for their foundation; in much of the East this is timothy and clover followed by corn, which in turn is followed by one of the small grains. Since red clover usually runs out after about two years, the land is left in hay only two or three years, and a

short cycle rotation is the result. Where alfalfa is used as the forage the rotation should be longer, since alfalfa usually produces more after it has been planted two or three years than it does the first year.

Many farmers in Utah have half of the farm producing alfalfa and the other half planted to such crops as sugar beets, potatoes, corn and the small grains. They keep the alfalfa constantly on the same land and change the other crops about on the other land without plan or system.

This practice is certainly a mistake.

Alfalfa should take its place with the other crops in a definite rotation and should not be left too long on the same land. A certain part of the alfalfa should be plowed up every year and another field planted. If 100 acres of general field crops are raised, and it is desired to have fifty acres of alfalfa, it is suggested that ten acres of alfalfa be plowed up each year and ten more acres planted. This will mean that each piece of land will have the alfalfa growing on it five years. This is long enough when alfalfa weevil and weed troubles are to be combated.

With this system each part of the farm will be growing alfalfa half of the time and will receive the benefits of this nitrogen-gathering crop. Where the land is kept constantly into alfalfa there is no opportunity for the benefits of the crop to be given to other crops.

I very earnestly recommend, therefore, that all the farmers of Utah plan a definite system of rotation for their farms and that alfalfa be used as a basis for this rotation.



On the Sugar Company Farm, Showing How the Third Crop of Alfalfa Is Being Plowed Under Nine Inches Deep, Preparing Land for Next Year's Beet Crop. On Many Farms They Need Better Fertilization and "Green Manure," as This Is Called, Is a Good Way to Put Humus Into Your Ground.

Rebreeding Sows

By Dr. W. E. Carroll.

The time to rebreed a sow will depend upon the time of her last litter and the time the new litter is desired. A sow should not be rebred before her last litter is weaned, even though she will take service from the boar. Especially is this true of a young sow, for it is apt to interfere with her development. For a good brood sow the strain of giving milk is no easy one, and if to this is added the strain of conception and the growth of the new litter, the powers of the young sow are taxed about to the limit and she has no opportunity to complete her own growth. Even to the mature sow the strain is too severe.

Another danger is that the milk flow is apt to decrease to the point where the sucking pigs are under-fed and because of this do not develop properly. Such a setback in early life is difficult to overcome and should be avoided where at all possible.

Pigs should not be weaned before they are six weeks old and two months is better.

A sow will usually breed two days after the litter is taken from her. If not bred at this time the period of heat normally recurs each three weeks thereafter until conception takes place.

The period of gestation in the sow (that is, the time from conception till birth of the young) is on the average 112 days, or roughly, three months and three weeks.

With this information in mind it is easy to determine when to breed a sow.

It is desirable to have fall litters of pigs come as early as is consistent with the factors mentioned above, as the early fall pig gets a better start before cold winter weather sets in.

Of course, good late fall pigs can be grown providing proper care and attention are given. The fact remains, however, that fall litters are usually more successful if they are born not later than the fore part of September. This would call for breeding of the sow not later than about May 20. It is not too late to breed now, however, provided a little extra attention can be given during the early life of the young pigs. It may, in fact, be advisable, under certain conditions, to breed even considerably later than now, where earlier breeding has not been possible. It should be recognized, however, that more care and attention will be necessary for a few weeks during the early life of the young pigs where they are farrowed later.

Raise More Hogs

By John Anderson.

Some thought should be given now about raising more hogs. Bred now for early fall pigs, the prospects for the fall looks good.

If we want to help in the production of food, do it by raising some more hogs.

The meat supply of the country can be increased more quickly by the "hog route" than by any other. The country's need to augment its supply is great, but prevailing high prices alone should be sufficient inducement to farmers to raise more hogs. The prospect of success never was brighter. The high prices ruling in all markets show that the demand for pork is in excess of the supply.

No branch of livestock farming is more productive of satisfactory results than the raising of well bred swine, if conducted with a reasonable care.

Hogs fit into the modern scheme of farming on nearly every farm, and are one of the most important animals to raise both for meat and for money. They require less labor, less equipment, and less capital, make greater gains per hundred pounds of concentrates fed, reproduce themselves faster and in greater numbers, and give a quicker "turnover" of

money than any other animal except poultry. Farmers of the West particularly have awakened to the merits of the hog and are rapidly increasing their output of pork and their bank accounts.

The hog has no rival as a consumer of by-products and numerous unmarketable materials which but for him might be wasted. Kitchen refuse, not only from farms, but from hotels and restaurants, when cooked before being used, makes an excellent feed.

The value of skim milk as a hog feed is known on every farm though not always fully appreciated. In the neighborhood of many large dairies pork production is a very prominent and lucrative supplement to the dairy industry.

To prevent tuberculosis, all milk and milk products should be cooked before being fed to hogs. To control hog cholera, use sanitary precautions and anti-hog cholera serum treatment. Give your hog every chance to become meat.

The hog is also a large factor in cheapening the production of beef. Hogs placed in the cattle feed lots to utilize the corn and other feeds the

(Continued on Page 7)

DAIRYING

FEEDING DAIRY CALVES

By Charles I. Bray.

"Whole milk at 20 cents or more per gallon is too expensive to feed to calves, and the butterfat can be economically replaced by grain feed. Skim milk contains all the feed nutrients of the whole milk, except the fat, which is not needed for the dairy calf after two weeks old. Cornmeal, ground oats or linseed meal may be used to advantage as supplementary feeds.

Milk fed to calves should be warm, sweet and clean, and fed at regular meal times in uniform amounts and in clean, scalded buckets. Occasionally very rich milk will be found to disagree with a calf. In this case the milk may be diluted with clean, warm skim milk or milk having a comparatively low fat content may be substituted.

A dairy calf of the smaller breeds should get about one gallon of milk per day, divided into three feeds daily for the first ten days and two daily feeds afterwards. Calves of the larger breeds will take more. After two weeks old, sweet, warm skim milk may gradually be substituted for the whole milk and the quantity gradually increased to one and one-half gallons per day, and to two or two and one-half gallons after two and one-half months old. Large calves may be given more. To check scouring in calves, reduce the feed and give one or two teaspoonfuls of dried blood in the milk daily.

SILAGE REASONS

T. E. Woodward, of the dairy division of the Kansas state board of agriculture, furnishes twelve good and well-considered reasons for the farmer providing himself with a silo. Every one of them touches some spot of vital importance to the larger profit

of dairy farming. Here they are:

1. More feed can be stored in a given space in the form of silage than in the form of fodder or hay.
2. There is a smaller loss of good material when a crop is made into silage than when cured as fodder or hay.
3. Corn silage is a more efficient feed than corn fodder.
4. An acre of corn can be placed in the silo at less cost than the same area can be husked and shredded.
5. Crops can be put in the silo during weather that could not be utilized in making hay or curing fodder.
6. More stock can be kept on a given area of land when silage is the basis of the ration.
7. There is less waste in feeding silage than in feeding fodder. Good silage properly fed is all consumed.
8. Silage is very palatable.
9. Silage, like other succulent feeds, has a beneficial effect upon the digestive organs.
10. Silage is the cheapest and best form in which a succulent feed can be provided for winter use.
11. Silage can be used for supplementing pastures more economically than can soiling crops, because it requires less labor, and silage is more palatable.
12. Converting the corn crop into silage clears the land and leaves it ready for another crop.

THE DAIRY COW A FOOD PRODUCER

By George B. Caine, Utah Agricultural College.

With the dairy cow such an important producer of human food, we must be sure to keep only the best animals in our dairy herds. Now that animal feed is so scarce and so high in price, it is very unwise to feed a poor producer. "The Babcock test is the farmer's method of keeping check on his herd."

Careful tabulation of daily milk weights and occasional use of the Babcock test in the dairy herds of Utah should be carried on with greater interest than ever before. Cows can no longer be maintained in the herd unless the owner knows that they are making a profit. No cow whose production is under 200 pounds fat per year can be maintained at a profit with the present price of feeds. No cow should be kept to help increase the great shortage in dairy products whose production does not equal or exceed 250 pounds of fat per year. There is absolutely no place for boarder cows and very little room for those that are barely making a profit. High production is always more economical than ordinary amounts, so we should strive for the greatest economy during the time of such a vast shortage.

Feeding cheaper more palatable feeds to the cows is one of the best means whereby we can increase the production of the average cow. Eliminate the poor cows, then take better care of the good ones by giving them more feed of greater variety.

The great value of the dairy cow as a food producer is clear when we consider the food value of dairy products.

Milk is the cheapest article of food at the present time on the market. Housewives should thoroughly realize the value of it and introduce more into the meals. If we consider that one quart of milk is equal in food value to eight eggs, one-half pound of meat, two pounds of chicken, etc., it shows that enough is not being consumed. The average person in the United States drinks only one very small glass of milk per day when one quart should and can be economically used.

At least three times as much cheese should be consumed as is being eaten at the present time.



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BECAUSE THE SKIM-MILK IS poorest without a separator in hot weather and often more harmful than helpful to calves.

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2nd If you have a very old De Laval or an inferior separator of any kind—

BECAUSE THE LOSSES OF THE poor separator from incomplete skimming and the tainted product of the hard-to-clean and insanitary separator are the greatest at this season.

easily handled and cared for than any other, and you cannot afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

BECAUSE OF THE GREAT economy of time at this season in having a separator of ample capacity to do the work so much more quickly.

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EFFECT OF MOISTURE ON WHEAT PRODUCTION

Basing their conclusions upon a series of experiments, conducted at the experiment station of the Utah Agricultural college, covering three years, Dr. F. S. Harris, director of the experiment station, and H. J. Maughan, assistant agronomist, declare in a bulletin recently issued by the college, that the yield of wheat under favorable water conditions may be more than twenty times as great as when moisture conditions are unfavorable. Unfavorable conditions may mean too much as well as too little water. It is just as bad to have the soil too wet as too dry. It was found that the highest yield of grain is obtained when the soil contains about 20 per cent moisture throughout the season. This condition is reached when about two-thirds of the moisture required to saturate the soil is used. The period prior to the goot stage is very critical, states the bulletin. If a plant is injured by drouth during this period it does not recover even if given plenty of water later.

This bulletin, which is No. 152, will be sent free upon application to the experiment station, Utah Agricultural college, Logan, Utah.

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"From the field there comes the breath of new
mown hay."

Grow more alfalfa and feed it to livestock—a
sure way to make money.

Flowers are late in blooming this year, but
they seem all the more appreciated now.

Alfalfa is one of our big crops, and this year
it seems to be better than for years.

Are we going to show as much enthusiasm in
caring for our gardens as we did in planting
them? It takes real work to keep the weeds
down and the soil well cultivated.

LEVELING LAND FOR IRRIGATION

In going over the irrigated farms of the state
we are often astonished at the slack manner in
which much of the land is prepared for irriga-
tion. Land that is naturally uneven is often left
in its original condition for years, and each time
the water is applied a great deal is wasted. The
soaking is decidedly irregular, the low places
being over-watered, while the higher ones are
scarcely wet. Of course on cheap land one
can go to the extreme leveling and spend more
than the land is really worth; but it seems to us
that more farmers spend far too little in pre-
paring for the most economical use of water.

BEANS IN THE ORCHARD

Many young orchards could be used to advan-
tage in raising a crop of beans. The land should
be cultivated anyway and there is no reason why
a crop of beans cannot be raised between the
trees. The demand for beans is great, and the
price is very high; a moderate crop will bring
big returns. If beans are planted between the
trees, a little more water is required than for
the trees alone. The beans may be planted in
rows from two to three feet apart with plants
from six to twelve inches apart in the rows.
Keep an even moisture content in the soil while
the plants are young, but do not irrigate after
pods set. The vines can be left on the land and
plowed under with profit.

WAGE WAR ON WEEDS

We do not believe it is necessary to keep tel-
ling why we should wage a war on weeds. A
reminder that the fight should be kept up and
started early before the weeds get any chance
of a growth is what we want to do at this time.
Weeds are waste and this is not the year for
waste of any kind. Weeds and food crops can-
not grow together, one of them must have the
right of way. Keep your fields free from weeds
and produce more and better crops.

OLD SOD

This is the year to get rid of old sod. On al-
most every farm there is a lot of land that has at
one time or another in the far distant past been
planted to alfalfa or some kind of grass. As the
years have gone by the original crop has gradual-
ly been run out by weeds or some other practical-
ly useless plants. Only a fraction of the original
yield is now harvested and still the sod is allowed
to remain undisturbed in producing its meager
returns.

This year when there is need for every acre
of land to produce to the fullest extent, these old
patches should be plowed up and seeded to some
cultivated crop till the weeds can be eradicated
when it can later be put back into a hay crop.
Good farm practice demands that hay land should
be plowed up when it becomes thoroughly in-
fested with weeds.

MORE COWS—BETTER ONES.

The food value of milk is being emphasized and
accepted by many people today—the demand for
it as a food is increasing. We must have more
cows, but they should be of the better quality.

Cow testing associations are proving to many
of our farmers what it cost to keep a cow. That
it is not profitable to feed certain kinds of cows.
That there is money in keeping a good cow.

The cost of feeding a cow is now very high,
and every one should know if each cow is profit-
able. This can be done by weighing and testing
the milk.

We need more cows, as it is a profitable way
to market our alfalfa and other feeds—but not
to poor cows.

Keep the better heifer calves and keep only
a pure bred sire of known value, and in a few
years we will be able to have more cows of the
better kind.

A WARNING BEFORE YOU SELL

From a very reliable source we learn that
Eastern buyers are coming and some are already
here to "tie up" our grain crop. They plan to
be on the ground early and make a contract for
fall delivery on what grain they can get this
way. If it will be profitable for them to do this
our farmers should find out what the market is
before they sell or contract.

Conditions are such that the best thing to do
is hold on for awhile. When buyers come in
this way bidding for grain it is a good sign of
higher prices. Some of our farmers have not
forgotten their experience of last fall with the
selling of their potatoes.

You can afford to take a chance of getting the
right prices this year, so do not be in a hurry
to sell or contract your crops.

NAME YOUR FARM

Surely every farm is worthy of a name, and you
should dignify yours by naming it and then hav-
ing the name recorded.

Something around or about the farm will sug-
gest an appropriate name, if you do not want to
use your own name. A combination name, made
up from the two owners—the farmer and his
wife—is often used.

Once established and known, there is a com-
mercial value to the naming of your farm. Many
farmers today have their printed stationery and
market their farm products under their own name.
Their name, like the name on all advertised prod-
ucts, guarantees the quality of that farm's prod-
ucts, and soon he has customers who purchase

from him because they know that his butter, eggs,
potatoes or fruit have a standard of quality.

The new law, which allows you to register your
name, protects you also, so that no one else can
use the same name. You ought to select the
name today and have it recorded before some-
one else chooses a similar name to the one you
like.

FALL USE OF FARM EQUIPMENT

In the effort to increase the production of
farm crops a distinct need of more machinery,
equipment and power is felt. A great deal of
the farm labor that was formerly available to
do hand work is now required to serve in the
army and navy and to help in the manufactur-
ing industries associated with war. This means
that the shortage of labor is likely to become
acute and that production will in many cases be
limited by the lack of labor and equipment. It
is suggested that those having implements that
could be of service in this connection offer their
use to neighbors. Horses should not be kept in
idleness. If any farmer has more teams than
he can use to advantage, his patriotic duty would
be to place these teams at the disposal of those
who can use them. Only by being thoroughly
united and by using all equipment to its fullest
capacity can production reach a maximum.

THE FOOD BILLS

If the report of the House of Representatives
agricultural committee is made in to a law, it
will be a big step towards helping us all to know
where we are "going to get off at."

It gives the President broad powers to guar-
antee minimum prices to producers, to curb
price boosting by speculators and even to pro-
hibit the use of grain for the manufacture of
alcoholic drinks.

This is a very important piece of legislation
and it is good to see them getting action on it.
Pushing this measure through and putting it into
effect means at least it will curb the food pirates
who are taking a bigger toll from the people
ashore than the submarines have yet been able
to do by sea. The farmers are blamed in many
cases for this high cost. They often make more
money selling these products than the farmers
do in raising them.

These new laws give new powers to the Presi-
dent and his agents and will stop many of these
evil practices. It is to be hoped something will
soon be done.

THE FOOD PROBLEM

Because of local conditions, the absolute ne-
cessity of producing more and conserving all we
can of our food supply is not so apparent to our
local people.

To bring it home to the American people, Mr.
Hoover, after making a careful study of Euro-
pean conditions, said: "The only hope of pro-
viding the deficiency is by the elimination of
waste, and actual and rigorous self-sacrifice on
the part of the American people. We must, also,
plant everything and everywhere it will grow, or
this time next year the food problem will be ab-
solutely unsolvable, and the world will face abso-
lute starvation."

Our duty to humanity and this nation is to help
with this food problem. There are a few crops,
such as beans, corn, etc., that can be planted yet
this year. Our big task is to make what we
have planted produce the most possible. Equally
as great is the problem of conserving these crops
in the best possible way. To harvest with the
least possible waste. Stacking of hay to avoid
waste, in many cases covering it will be profit-
able, putting livestock on the harvested fields
to gather up the waste and save their feed, and
many other ways of conservation might be sug-
gested.

It is not only our patriotic duty to do this, but
it is good farming, the way to practice thrift
and make money. Help humanity by helping
yourself.

RAISE MORE HOGS

(Continued from Page 3)

cattle have failed to digest and which otherwise would be wasted. Hogs following steers in many cases have increased the profit per steer by from \$6 to \$9. Hogs should not be allowed to follow dairy cattle unless the cattle are tuberculin tested.

Disease, such as cholera, has been taking a smaller toll the past season than in recent years; more pure-bred and high-grade hogs are available than ever before; prices of hogs are now past the 16-cent level; demand for pork is keen. All of which means that the farmer who does not raise hogs is losing a chance to increase the supply of pork and thus serve the country and at the same time expand a profitable phase of farming.

SOME REASONS FOR SHEEP ON THE FARM

By C. G. Rock.

The price of sheep has gone so high that now more than ever they can be profitably kept on the average farm.

The rapid depletion of the flocks of the range country by the taking up of the grazing land by settlers and homesteaders, and the discouraging, depredating raids made by dogs upon the eastern flocks, naturally make a serious shortage in the mutton and wool markets of the United States.

The proposition of helping supply the nation with mutton and wool will eventually become one of the resources of the average farm.

It is a pleasure and revelation to have upon the farm a flock of sheep that is well bred and well cared for, browsing over every nook and corner, devouring the noxious and pestiferous weeds, cleaning up the fence corners, and ridding the farm of one of its most dreaded pests and enemies, which would go to waste were it not for the sheep which convert it into wool and mutton.

The fertilizing influence of the golden hoof has been demonstrated by steadily increasing yields on soils not naturally very productive and which have been cropped to the starvation point. It is this fertility restoration and increase faculty of the sheep that ought to insure a footing for the industry on a large per cent of the farms.

A bunch of ewes and their lambs require little attention and consume feed that is not missed in the animal farm expenditures. The weeds they destroy and their value in keeping up soil fertility are factors worth reckoning with, and the assertion that such a flock, yielding two crops, lambs and wool, annually, can be made by intelligent management and proper care to return \$7 or \$8 per head yearly is not open to dispute. With good breeding, a 90 or 100-pound lamb can be produced if given a gross return annually for each member of the flock of near \$8 to \$10. This figures only 100 per cent increase of lambs raised. It is easily possible to do better.

The cost of keep in the case of a small farm flock is barely noticed on the average farm, as for eight months of the year the ewe can practically pick up a living. During the winter, corn fodder, alfalfa and straw as roughnesses, and a little grain, preferably oats, if necessary, will keep the animals in excellent condition.

They will clean the fence corners, devour weeds, eat the lower blades of the corn, and if lambs, will not disturb ears to any extent until the green roughage is consumed.

The grazing of sheep on the farm has two effects upon the land. The sheep clean up the waste feeds, thereby giving the fields a neat, clean appearance. At the same time they add the richest fertilizing manure of all manures to the soil.

The feeding of sheep and lambs in the last few years has been a very profitable venture. The feeder has three sources of profit, mutton, wool and a by-product manure, which every soil must have sooner or later in or-

der to maintain its high state of production. If we continue to feed the world from the soil, we must feed the soil.

It is the attention to little things that counts with sheep. Cleanliness, above all things, is necessary in successfully handling sheep, and acquiring familiarity with one's charges is equally essential.

But to assume that successful sheep husbandry implies nothing but wearisome detail and constant annoyance is illusory. To one interested, what can be more enjoyable than time spent with a flock of ewes and their lambs in springtime and summer? Or watching the daily progress of a band of sheep or lambs in the finishing stage during the fall or winter period. I know that the mere suggestion of keeping a flock of sheep provokes a torrent of objection from most people, many of whom speak from experience. The man who attempts to handle sheep after the same manner as hogs or cattle is riding for a fall, which is one reason for the rendition of so much disastrous experience. Sheep troubles disappear as one gets interested in their habits and there is keen satisfaction to be derived from the practical side of the industry. In success is found abundant reward for all the little troubles that have been encountered. None of the domestic animals is more susceptible to attention than the sheep, and none shows the effect of neglect so emphatically.

Now is the time to stock the farm with a few sheep, and with a little judicious care and management there is every reason to think that flock masters have an encouraging future before them. Sheep when grazed are the best distributors of manure a farmer can have. So, taking into consideration the remunerative prices that have now for some time been secured both for mutton and wool, and the greatly increased fertility of the soil derived from sheep farming, it can safely be said that there is no class of ordinary farm stock more profitable to keep at the present time than the "golden hoof" of the farm.

FOR BLISTERS

When new shoes rub blisters on heels and toes, immediate relief may be had by washing blisters clean and applying adhesive tape to more than cover the blister. This is equally as good for blisters on the bottoms of the feet caused by walking too far or playing tennis, etc.

STOCKING ECONOMY

If baby's stockings are worn at the knee, and the feet are good, cut off all the torn part and sew on the ribbed top of old socks. Sew on the wrong side first, turn over and sew the seam down and you will have a pair of stockings for nothing that will last a long time.

EFFECTIVE

Pa—At last I've found a way to make that young scamp of ours stop winking his eyes.

Ma—Really?

Pa—Yes; I'll show him the article in this science magazine where it says that every time we wink we give the eye a bath.

SMOOTH ICING

In making chocolate icing, if cocoa is used instead of the chocolate in cakes, the icing will be smoother and of a much better flavor. Use two table-spoonfuls to each cup of sugar.

TO PREPARE HAMBURGER STEAK

Put the onions through the food chopper first and the meat last. In this way the meat absorbs the onion essence left in the machine, which would otherwise be wasted, and also helps materially to free the chopper of the disagreeable "after flavor" of the onion.

TOO MUCH SALT

When cooking, if too much salt is used, place a wet cloth over the top of the vessel and the steam will force the salt into the wet cloth.

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Fight the weeds and help increase production. When you cultivate to kill the weeds you also stir the soil, which means increased production. Weeds are the greatest robbers the farmer has to contend with.

HOME

DISHES WITHOUT MEAT

By Lily Haxworth Wallace.

With the coming of warm weather, meat becomes distasteful to most of us, and even though we may not desire to eliminate it altogether from our dietary, we are more than content to banish it at least in part. But while it is true that the system does not require as heavy food in summer as in the colder weather, it must not be forgotten that a definite amount of nutriment is required to keep the body in good condition, and it is part of the duty of the housekeeper to so plan the daily meals as to afford the members of the family nourishing and appetizing food without overtaxing the digestive organs. Here are a few suggestions for varying the monotony in our menus:

Carrots and Rice

One dozen young carrots, two-thirds cupful rice, butter, bread crumbs, one cupful white sauce, salt, pepper, chopped parsley.

Scrape the carrots, cut them into rather thick slices and boil them until tender either in water or stock. Cook the rice until tender, then drain it. Season both carrots and rice rather highly with salt and pepper. Make a white sauce and place alternate layers of rice, sauce and carrot in a buttered baking dish; a little chopped parsley may be sprinkled over the layers of carrots. Put buttered crumbs on top of all and bake in a moderate oven about twenty-five minutes.

Kentucky Corn

Two cupfuls corn, 1 cupful milk, 2 eggs, seasoning, 2 tablespoonfuls melted butter.

Beat the eggs until light, add them to the milk, then stir in the corn and the melted butter. Season to taste, turn into a buttered baking dish; place in a pan of hot water and bake in a moderate oven just until set, like custard. Either fresh or canned corn may be used.

Spanish Rice

One cupful rice, 4 fresh tomatoes, 1 green pepper, 1 small onion, 2 tablespoonfuls olive oil or butter, ½ cupful hot water.

Chop the onion fine, also the pepper, and cook ten minutes in the butter or oil, but without browning. Add the tomatoes. Canned tomatoes may be used if fresh ones are unobtainable, use two cupfuls and omit hot water. Let these come to boiling point, then put in the rice, together with the hot water. Add more water as needed, but only just enough to keep the mixture moist. Cook very slowly for at least an hour.

USEING THE LEFTOVERS

No Food Should Be Wasted—Some Ways to Use the Leftovers.

Meat Croquettes

Two cups cold mashed white potatoes, 1 cup chopped meat, 1 well-beaten egg, 1 teaspoonful flour, a dash of sage, salt and pepper to taste. Shape, roll in cracker crumbs and brown nicely in hot fat.

Meat and Vegetable Salad

Wash and dry a head of lettuce, rejecting the outer leaves, put in a salad bowl and dress with French dressing, add a cup and a half of cold boiled potatoes cut in dice, 1 large sweet apple, chopped, 2 stalks of celery, 2 tomatoes, an onion, a cup of cold meat cut in small pieces, and any leftover vegetable; over the whole pour mayonnaise and mix thoroughly.

Mince Meat

Bits of meat from a soupbone, cold roast and steak, etc., may be ground together for mince meat. Two cups chopped meat, 1 cup suet, 2 cups apples (dried or fresh), 1 cup each raisins and currants, 1½ cups sugar, 1 cup molasses, 1 cup vinegar; salt

to taste. Mix all the ingredients and cook slowly till well done. Seal in small jars and put away to use as needed.

Scraps of Pie Crust

To make good use of the scraps from trimming the last pie, roll it out into a flat strip about 4 inches long and ¼ inch thick and as long as dough will allow. Spread this generously with butter, sugar and a little cinnamon or nutmeg. Begin at one end and roll; pinch it down at each end and bake. This makes a very satisfactory reply to the hungry schoolboy who comes bounding in with "Got anything to eat?"

Sour Milk Pancakes

For a family of four, soak four or five cold biscuits over night with a cup of water; in the morning add a cup of sour milk, 1 egg, a pinch of soda and salt, 1 teaspoonful of baking powder and 1 cup of flour, or just enough to make a good batter. Stale light bread or leftover cereal may be used instead of biscuits.

HOW TO TEST FOR JELLY

Simple Alcohol Test Prevents Waste of Sugar and Failure of Jellies.

Much waste of sugar and spoilage of jellies can be avoided by using a simple alcohol test recommended by the United States Department of Agriculture. To determine how much sugar should be used with each kind of juice put a spoonful of juice in a glass and add to it one spoonful of 95 per cent grain alcohol, mixed by shaking the glass gently. Pour slowly from the glass, noting how the pectin (the substance in fruits which makes them jelly) is precipitated. If the pectin is precipitated as one lump a cup of sugar may be used for each cup of juice; if in several lumps the proportion of sugar must be reduced to approximately three-fourths the amount of the juice. If the pectin is not in lumps, but is merely precipitated, the sugar should be one-half or less of the amount of the juice. If the juice shows no precipitation under this test, it is unsuitable for jelly making and must be combined with apples or other juices rich in pectin.

The housewife will do well before making the test to taste the juice, as fruits not as acid as good tart apples probably will not make good jelly unless mixed with other fruits which are acid.

CORN AS A FOOD

By Mary Johnson.

A great deal of interest has been taken in the planting of corn. Often cornmeal is shipped into our state from the "corn states" and sells at as high a price as wheat flour. This year we can have our own cornmeal and should help to reduce the cost of living, help to conserve the wheat flour supply and furnish us with a very nourishing change in our menus.

The corn bread of the old-time southern cooks took a very prominent place in the diet of both rich and poor. From the plain corn hoeecake to the more elaborate steamed breads, they were deliciously flavored and very nutritious. These breads were always made from water-ground meal, which contained all of the nutritive parts of the whole grain.

This meal is seldom found in the present day markets, as most all of the meal now on the market is ground by a process which removes a large part of the fat from the grain. However, any good white cornmeal can be substituted and, though containing less fat than the old-fashioned meal it still has a high food value in the diet.

Cornmeal Hoeecake

One cupful of white cornmeal, one cupful of boiling water, one-third of

DINNER'S READY!

Delicious — because cooked over the New Perfection Long Blue Chimney.

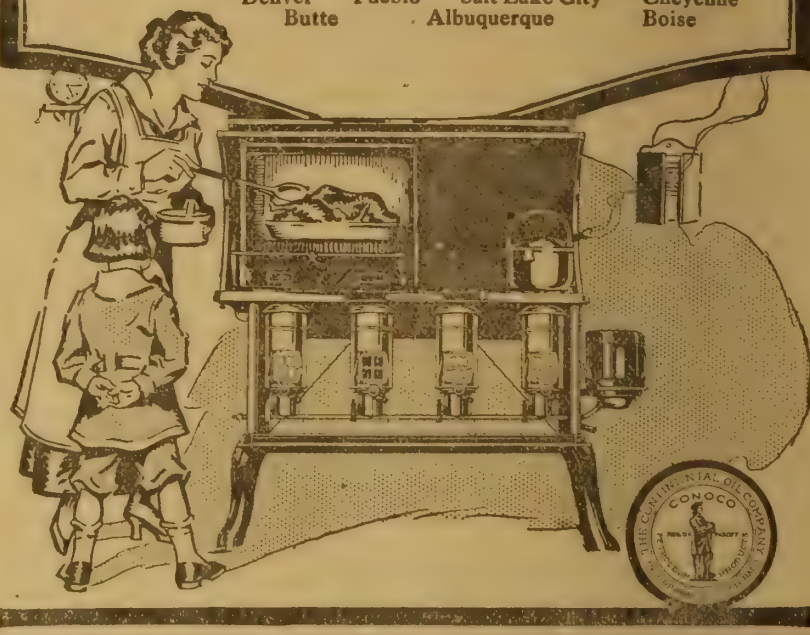
More than 2,500,000 housewives are using the New Perfection—the different oil cook stove. Easy to light. Cooks fast or slow as you like. No soot. No odors.

See it at any dealer's—it means a cool clean kitchen.

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a cupful of cold water. Stir the boiling water into the meal thoroughly and let cool. Add the cold water. Brush over a griddle with fat and let get smoking hot, then spread the corn-meal mixture on it. This may be baked in one large cake or in individual ones. When brown on one side turn, and when both sides are brown remove to a hot plate, sprinkle with salt and spread with butter. Serve while hot.

Browned Cornmeal Biscuit

Spread one cupful of cornmeal thinly on a flat tin, and brown lightly in the oven, stirring to get an even color. While still hot add one-half teaspoonful of salt, and mix to a stiff batter with boiling hot nut cream (about two cupfuls), beating thoroughly. Drop by spoonfuls on buttered tins, and bake until well browned. The nut cream is made by rubbing peanut butter smooth with a little warm water until the consistency of cream.

Cornmeal Dumplings

Pour over fine cornmeal sufficient boiling water to just moisten; this must be rather dry, not too wet; cover bowl and let stand until cool; then stir in the unbeaten whites of two eggs or a whole egg, and a little salt; roll into balls, drop them into broth or stock in which a ham bone has been cooked, and cook 20 minutes; pour over them a brown sauce made from the broth in which they were boiled; serve hot.

Corn Drops

One pint of boiling water, one pint of cornmeal, six ears of green corn, one egg, three tablespoonfuls of sweet milk; pour boiling water on the cornmeal and let it cool; beat in the egg, milk and shortening, mix in the corn and fry in hot fat.

Cornmeal Fritters

One pint of sour milk, one teaspoonful of salt, three eggs, one tablespoonful of sugar or molasses, one small cup of flour and cornmeal enough to make a stiff batter; lastly, stir in a small teaspoonful of soda dissolved in a little warm water.

Cornmeal and Rice Waffles

One-half cup flour, one cup boiled

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today and put up lots of berries and other good fruits. You must do all you can to conserve the fruit crop; it will help to keep down the price of other foods.

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rice, two eggs well beaten, one tablespoon melted butter, one-half teaspoon soda, one teaspoon salt, one cup sour milk. Sift together the flour, soda and salt. Add the other ingredients and beat thoroughly.

Cornmeal Pancake

Two cups flour, one-half cup cornmeal, $1\frac{1}{2}$ tablespoons baking powder, $1\frac{1}{2}$ teaspoons salt, one-third cup of sugar, $1\frac{1}{2}$ cups boiling water, $1\frac{1}{4}$ cups milk, one egg. Add meal to boiling water and boil five minutes; turn into bowl, add milk and remaining dry ingredients mixed and sifted, then the egg well beaten, and butter. Cook on a greased griddle.

Breakfast Muffins

Two cupfuls of white cornmeal, three eggs, two cupfuls of buttermilk, one teaspoonful of soda, one teaspoonful of salt, one teaspoonful of sugar, two tablespoonfuls of melted butter. Sift the dry ingredients together, then stir into them the buttermilk. When well mixed add the eggs, beaten light, and the melted butter. Pour into greased and smoking-hot muffin rings and bake quickly.

Cornmeal Batter Bread

One cupful of white cornmeal, one and one-half cupfuls of boiling water, one cupful of sweet milk, one teaspoonful of salt, two teaspoonfuls of baking powder, three eggs (two may be used when eggs are scarce). Scald the meal with the boiling water and stir until well blended. When cool add the sweet milk and beaten eggs, then the salt and baking powder. Put two tablespoonfuls of butter in a baking dish and let get smoking hot. Pour the batter in and bake immediately in a quick oven until golden brown on top. Serve from the dish while hot.

Cornmeal Griddle Cakes

Three-fourths of a cupful of white cornmeal, one-fourth of a cupful of flour, three-fourths of a teaspoonful of soda, one teaspoonful of salt, one and one-half cupfuls of buttermilk, one egg. Sift the dry ingredients twice, beat the egg and combine with the buttermilk, then stir into the meal. Beat hard for five minutes, and bake on a hot griddle. Butter and serve immediately.

HOW TO MAKE YOUR SHOES LAST

Uncle Sam is interested in preserving the shoes of the nation, and has taken it upon himself to tell us just how that can be done.

War demands leather for soldiers' shoes, for harness, for equipment of many kinds. In this country there is no such surplus that we can afford to waste any of it. In the army and out, we all wear shoes. If we manage them rightly they will last longer, we will not need so many new ones and there will be more left for others. Here are some official suggestions to help cut at least one bill.

Shoes should be oiled or greased whenever the leather begins to get hard or dry. They should be brushed thoroughly and all the dirt and mud that remains washed off with warm water, and the shoes wiped with a dry cloth. While the shoes are still wet, apply oil or grease with swab of wool or flannel. It is best to have the oil or grease about as warm as the hand can bear, and it should be rubbed well into the leather, preferably with the palm. If necessary, the oil can be applied to dry leather, but it penetrates better when the leather is wet. After treatment the shoes should be left to dry in a place that is warm—not hot.

Castor oil is recommended for shoes that are to be polished. For plainer footgear neatsfoot, fish oil or oleine may be substituted. If it is desired to make the shoes and boots waterproof, beef tallow may be added to any of these substances at the rate of a half-pound of tallow to a pint of oil. The edge of the sole and the welt should be greased thoroughly. Too much grease cannot be applied to these parts.

A simple method of making the soles more durable, pliable and water resistant is to swab them occasionally with linseed oil. Many of the com-

mon shoe polishes are harmful to leather.

All those which contain sulphuric, hydrochloric or oxalic acids, turpentine, benzine or other volatile solvents, have a tendency to harden the leather and make it more liable to crack.

It is poor economy, too, to wear a shoe with the heel badly worn on one side. This throws the shoe out of shape and will soon result in its ruin. It is also likely to cause injury to the foot.

PROMISE OF PROFIT IN BEANS THIS YEAR

Beans give promise of being a very profitable crop this year, owing to the food shortage and the extraordinary demand for staple non-perishable food-stuffs.

Persons planning to plant beans should remember:

That light soils, including the sandy loams and loams, are better suited to beans than heavier ones.

That small navy beans now command the highest market price and require less seed per acre—from 30 to 45 pounds.

That early and constant cultivation before the seed is sown will help reduce the work of weeding later.

That seed should be planted from $1\frac{1}{2}$ to 2 inches deep.

That the highest yields to the acre have been obtained by drilling the beans in rows 24 inches apart, with the plants about 4 inches apart in the rows.

That only such cultivation is needed as will keep the soil mellow and free from weeds.

MY PHILOSOPHY

I ain't, ner don't p'tend to be,
Much posted on philosophy;
But there is times, when all alone
I work out ideas of my own
And of these same there is a few
I'd like to jest refer to you
Pervidin' that you don't object
To listen clos't and rickollect.

I allus argy that a man
Who does about the best he can
Is plenty good enough to suit
This lower mundane institute—
No matter ef his daily walk
Is subject for his neighbor's talk,
And critic-minds of ev-ry whim
Jest all git up and go fer him!

My doctern is to lay aside
Contentious, and be satisfied;
Jest do your best, and praise er blame
That follers that, counts jest the same.
I've allus noticed great success
Is mixed with trouble, more or less,
And it's the man who does his best
That gets more kicks than all the rest.

—James Whitcomb Riley.

HIS PLAN

An Irishman who was rather too fond of strong drink was asked by the parish priest:

"My son, how do you expect to get into heaven?"

The Irishman replied:

"Shure, and that's aisy. When I get to the gates of heaven I'll open the door and shut the door, and open the door and shut the door, an' keep on doing that 'till St. Peter gets impatient and says, 'For goodness' sake, Mike, either come in or stay out!'"

UNFAIR

The employer of a Polish servant maid who has learned to speak English was telling of her experiences with the telephone. After its use was explained to her she was eager to answer every call. One day a ring came and she jumped to the instrument.

"Hello!" came from the reciver.

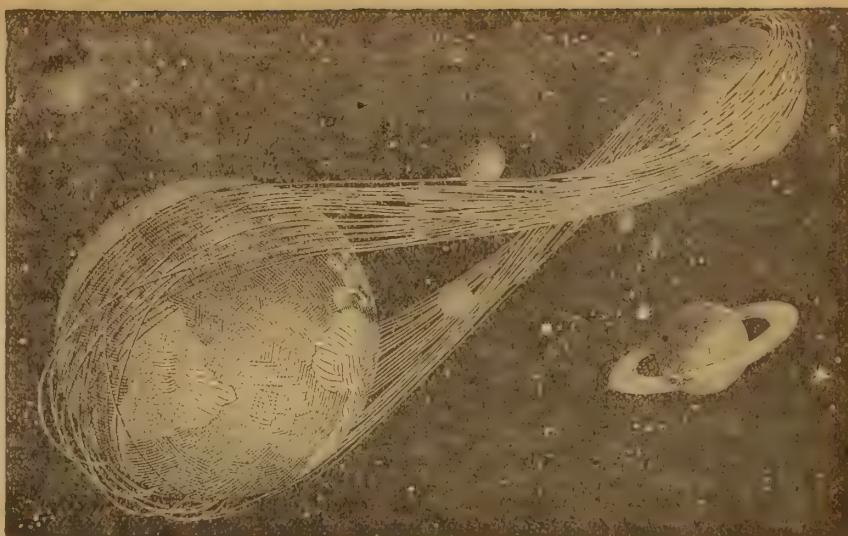
"Hello!" answered the girl, flushed with pride at being able to give the proper answer.

"Who is this?" continued the voice.

"I don't know," exclaimed the maid. "I can't see you."

LEFT-OVER PIE CRUST

To make something delicious for



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The Bell System has about twice as much telephone wire as all Europe.

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In proportion to population the extension of the Bell System in the United States is equal in two years to the total telephone progress of Europe since the telephone was invented—a period of about forty years.

The Bell System fills the telephone needs of the American people with a thoroughness and a spirit of public service which are without parallel the world over.



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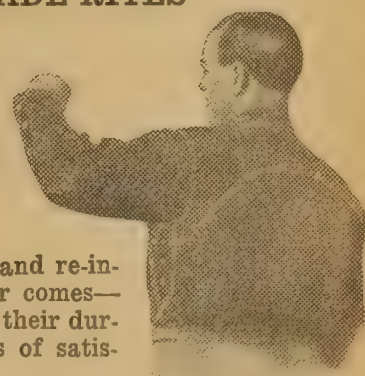
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the kiddies or the grown-ups use your left-over piecrust. Roll out as for pie, spread with melted butter, sprinkle thickly with sugar, then sprinkle over some cinamon; roll as for cin-

namon rolls or jelly cake. Cut off pieces about an inch thick, sprinkle a little sugar on top, and bake in a hot oven until a light brown. They are better than cinnamon rolls.

VEGETABLES MAY BE DRIED SUCCESSFULLY

By Addie D. Root.

Economy may be effected by drying vegetables by artificial heat. The simplicity of the method and equipment and the ease with which the dried product is kept makes drying a very practical substitute for canning. When drying string beans or peas a good green color may be preserved by blanching them before placing them in the dryer. (Vegetables may be blanched by placing them in boiling water for a few minutes and then plunging them into cold water. Prepare the peas and beans as for cooking. Blanch from two to five minutes and place in the dryer at a temperature of 140 to 160 degrees Fahrenheit.

Greens, such as Swiss chard and spinach, makes an attractive dried product. Only fresh greens should be dried. Prepare as for cooking and place in the dryer. Keep at a temperature from 140 to 160 degrees Fahrenheit.

Corn should be cooked in boiling water from eight to fifteen minutes or just long enough to set the milk. It is then cut from the cob with a thin, sharp knife and placed in the dryer at a temperature of 140 degree to 160 degrees Fahrenheit.

Vegetables such as carrots and sweet potatoes may be dried. Vegetables of this type dry better when cut into small pieces.

It requires about three hours to dry vegetables by artificial heat in a simple drying apparatus, which can be made at home. Such a dryer may consist of a series of wooden trays, two inches deep, with screen wire bottoms. The trays should be placed one upon the other and elevated above the stove or other source of heat by a box ten inches deep, from which the top and bottom have been removed, and which should rest on four bricks to permit air circulation under the dryer.

SAVE THE FAT

By Dr. Louise Stanley.

The increased prices of butter, lard and all other fats bid fair to go still higher. The shortage can be relieved considerably by saving much of the fat which is usually wasted in the home. Such saving may avert a deficit of this important foodstuff, which accounts in part, it is said, for the inadequate diet of the German people. Investigations of additional sources of fat are being made; but it remains for the housekeeper to conserve the available supplies.

The familiar grease trap stood for many years at the foot of the sink as a definite testimonial of the fat wastage which passed out of the house by that route. The garbage can and the slop bucket give further evidence. Some of this waste is unavoidable perhaps, but much of it can be saved and every housewife should appoint herself that task.

Efforts should be made to utilize the fat which comes into the home in the form of fat meat. Much of it is rendered as the meat cooks. This should be clarified and saved. Serve a piece of fat and a piece of lean if the family will eat fat. Otherwise, save the fatty portions so that the fat may be rendered and used instead of lard.

The fat which cooks out from bacon should be carefully treasured. If it is not scorched, it may be used for cornbread, muffins, griddle cakes, in salad dressing, to season vegetables, and in numerous other ways.

Chickens in good condition usually yield more fat than is palatable to serve with the meat or soup. The excess may be used acceptably wherever any other fat is used. It has been recommended as especially desirable for pastry. On account of its consistency it may be mixed with harder fats to make them all more soft.

Soup should be set aside to cool so that the fat may collect in a cake on the surface. This may be placed with the fat to be clarified.

Water may be used in clarifying fat. The amount to be added depends upon the degree of impurity of the fat. Heat only until the fat melts and then stir well. The fat separates as a more or less clear layer on top while the water dissolves out much of the impurity from it. If the fat contains sediment, it can be removed by straining while hot through double cheese-cloth. If objectionable odors and flavors are present, they may be removed in many cases by heating the fat with small pieces of charcoal.

Fats should be kept free from water in closed opaque containers in a cool place. Rancid fats may be kept for soap-making.

If every housekeeper will pledge herself "to save the fat," we need not fear a fat famine in our country. If we continue in our reckless waste of this valuable food, the amount is likely to fall far short of our needs, and the price will be unnecessarily increased. Will you do your part to keep up the supply and keep down the price?

STOP FOOD WASTE BY DRYING SURPLUS FRUITS AND VEGETABLES

The fact that every important country of the world is facing an extremely serious shortage of food materials, and that it is the peculiar task of the United States to meet the need by increasing her production of the great food crop, is now recognized by everyone. We are somewhat slower to realize the equally evident fact that increased production is no more important than the conservation of every pound of material which is produced. Upon this point Secretary of Agriculture D. F. Houston has said:

"Both for economical and patriotic reasons the American farmer should strive this year for the highest standard of efficiency in the production and conservation of food. But production accomplished by wasteful methods does not make for efficiency, and careful thought, therefore, should be given to the steps that need to be taken. * * * Some of the most conspicuous crop wastes occur with fruits and vegetables, of which, in normal years, larger quantities usually are grown than the producers can market profitably. Frequently these losses are due indirectly to disease and insect injury, which lowers their market value without reducing their food value materially if they can be utilized promptly by drying, canning, or other preservative methods. Under existing conditions, every practical step should be taken to protect these crops throughout the season and to utilize and preserve them as fully as possible when they have matured. To the extent that competent labor is available, either hired or in the family, fruits and vegetables, which it is ordinarily inadvisable to attempt to conserve, should be systematically saved for use by canning, drying or preserving. * * * Because of the scarcity of tin plate and the high price of tin cans, it may be necessary in household preservation of food more extensively to pack fruit and vegetables in other containers. This situation may call for new methods of preserving or the improvement and extended use of old processes such as drying."

These words of Secretary Houston come with especial force to our state, which annually has an enormous loss of potentially valuable food material in the form of low-grade and cull fruits unfit for market and of fruits and vegetables in excess of the growers' needs.

It is certain that the use of transportation facilities for other necessary purposes will make it impossible to market the usual volume of the higher grades of fruit and that the growers are, therefore, facing enormous losses unless other means for utilizing the material are provided. It is equally certain that the small number of canneries in the state cannot handle any materially in-

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The G-E electric range involves no new methods of cookery, but insures better and more uniform results. These ranges can be had with or without warming closet, with high or low oven, and with arrangement of vegetable cookers and hot-plates to suit your requirements.

All types of G-E range are thoroughly practical and reliable. We have them at a variety of prices to suit almost every purse.

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creased volume of these products, for the reason that the cost of containers will be prohibitive even if they are not actually unobtainable. The only practical method of meeting the situation is by providing means for drying the surplus and unmarketable material, both in the commercial orchards and in the small orchard and berry patch of the farm home.

Cream Coconut Pie

One pint boiling milk, two egg-yolks, two tablespoons of flour, one tablespoon butter, three-fourths cup sugar. Beat last four ingredients, then stir in milk and cook until thick. Remove from stove and add one-half package coconut and flavor to taste (vanilla).

Put in baked crust add meringue made of whites of eggs and a little sugar. then brown in oven.

OLIVE OIL IN BEANS

I have discovered that olive oil used to season beans, both baked and boiled, is much better and more easily digested than either butter or pork. Use about four tablespoonfuls to a quart of beans.

EASY WAY TO OPEN FRUIT JARS

In opening thirty sealed jars of home-canned fruits and vegetables it will be found that they open with much less trouble if allowed to stand bottom side upwards for a few moments in a pan of hot water.

Cleaning Your Car at Home

By Eva M. Furbush.

Do not pay from 75 cents to \$1.25 for having your car cleaned at a garage; do it yourself, and save the money for gasoline, thereby, also, giving the car a more thorough going-over than it would otherwise get, and giving it the necessary care before the mud has had time to "set" on the high finish. Who mentioned "fresh air"? These two words alone are enough to make the owner who takes pride in his car want to clean it himself, for every minute that tar remains in a machine spells ruin to the glossy finish.

The first step in cleaning a machine is to gently soften up the dry, caked mud on the running gear with a sponge and lukewarm water. Do not rub the mud off, just soak it off slowly. A hose may be used, if preferred, but I do not like the cold water from the tap, nor the usual force. Leave the running gear awhile to let the mud soften up.

Brush the cloth top carefully, but never wash it. If you are unfortunate enough to get grease spots on it, clean them off with white soap and water. Always brush the top, inside and out, and fold carefully before putting it in the casing—never when it is wet or dirty. Be sure the side curtains receive the same careful dusting and folding before being fastened into the cases for them. Do not try to jam anything into place; see why it does not go readily, and save many a bit of damage to nice fittings. Wipe over the casing for the top with a damp cloth, using no polish, chemicals, or soap which may tend to destroy its waterproof qualities.

Next brush the slip covers thoroughly, and sweep out the two floors of the car, or, if necessary, wipe over the leather where there are no slip covers. Spots on slip covers should be treated as one would those on one's

best gown. Sometimes ether will remove them all right, or white soap and water, or a bit of French chalk; but in the majority of cases the color is quite apt to come out a little, so be sparing of your treatment whatever it may be. Wipe out the car pockets once in awhile; they are very much like a housekeeper's closets, and need a general housecleaning once or twice a year. Grease spots on the carpeted floor can be removed with gasoline, and turpentine will brighten up the color like a house rug. Wash the forward floor with a wet cloth, simply dusting the dashboard and polishing the nickel fittings with silver polish. Clean the windshield with a damp chamois, then polish with a dry one until it shines.

With the inside of the car done, close all doors tightly, and softly sponge off the body part with a different sponge from the one used on the running gear. Rinse very often to shake out grit, and change water frequently, for you are handling a finish as delicate as that on the highest-priced piano. Wipe off superfluous water gently with soft, clean cheese-cloth.

Again start in on the running gear, and wash off all mud, rinsing with the hose if preferred, after each washing. A soft, narrow, long-bristled brush takes the mud from many places where the hand fails to work properly, also a long-handled window brush will reach the mud far under the car quite easily. If there is "fresh tar," gasoline will remove it, but it is just as essential to wash off the gasoline quickly, for it deadens the luster immediately. Never let tar stay on an hour longer than you can help, for one night will harden it like old paint, and you cannot budge it. While touring we have had our car caked with mud and tar. But all that I attended to immediately left no blemish; but other spots which were neglected were dulled beyond restoration.

When the entire car is clean, it is time to begin the polishing process. I have used prepared wax, a local piano polish and other things, but at present am using cedar oil, which is excellent, and gives a polish to our car just as fine as if it had come direct from the factory.

My method of applying it is to moisten a chamois first with water, then a few drops of cedar oil, and wiping it off at once with a soft piece of cheesecloth. Rub until brilliant, using another dry cheesecloth if necessary. Do not put on much polish at one time, but repeat the entire operation until you have a fine luster, because it is not the quantity of polish you use, but the way you apply it that gives results. I do not let this cedar oil polish dry on for any length of time, preferring to remove any kind of polish as soon as possible. Use separate set of polishing cloths for the running gear. This is one secret of a beautiful car. After five years of experience cleaning my own car, I have received many compliments on its richly-preserved luster.

It usually takes about four hours to clean a large car, but there is as much satisfaction in doing it yourself as there is in driving the car—or should be, because like most of our valued possessions in life, an automobile will return to us doublefold the care and attention we bestow upon it. And then again, a garage force is too pressed for time to regard your car any more highly than it does forty-seven other styles and makes. You will get the most efficient and pleasing results in the long run, if you decide to give your own car all the professional cleaning it may happen to need—right in your own backyard.

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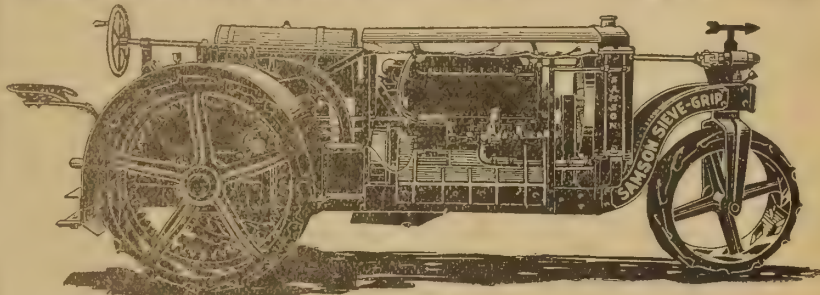
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FOOD ENERGY IN SUGAR

When we say that a thing is cheap or dear we mean that it is so by comparison. We instructively measure the price of today with the cost of the same article last month, or last year, or five years ago, and note that we are getting more or less for a certain amount of money than at the earlier date.

Beefsteak at 35 cents a pound is unduly expensive, in the opinion of the housewife who remembers the time when she could buy it at 20 or 25 cents. Eggs at 60 cents a dozen are a luxury in which we hesitate to indulge because we have been in the habit of paying only half as much. A proposal to add 1 cent to the charge of a loaf of bread is regarded as revolutionary, although it would increase the yearly budget of the ordinary family by no more than the cost of a pair of theatre tickets, because the 5-cent loaf has been an established institution as far back as we can remember.

When the grocer takes a quarter for a 3½-pound bag of sugar and hands us no change we think that sugar is expensive for we recall that a few years back 5 or 7 or 8 cents would have been returned to us out of the same transaction. It does not occur to us that before the cost of our sugar was increased by the conditions created by the European war it may have been selling at too low a price.

Measured by this standard sugar is today, as it long has been, the cheapest food that we can buy.

Food energy is measured in calories, and if we are not too far away from our high school days we may remember that a calorie is the amount of heat required to warm one gram of

water one degree Centigrade. A pound of sugar contains 1,750 calories. At 8 cents a pound, which is a fair average, perhaps a high average, of the present retail price, we obtain as many calories as we do from five times that sum invested in beefsteak. We get from sugar three times as many calories at half the price we would pay for eggs, and our purchase of sugar will give us just about three times as much available energy as would the same amount expended for such a nutritious article as cheese.

We would not contend, of course, that sugar alone will provide a satisfactory diet or that it can be made to take the place of any of the other foods mentioned. But the truth remains that penny for penny we get far more actual energy from sugar than from any other commodity of everyday use, and that sugar is, therefore, the cheapest food we buy. So, when next we purchase sugar, let us think in terms of calories and realize that we are getting something genuinely cheap.

GOOD RICE

I put one cup of rice to one quart of boiling water. Cook until you can see no water in it, take from the fire and place the vessel in which it was cooked in a pan of boiling water, let remain for ten minutes or longer. You will always have whole grains and snow white.

PARRAFIN A HELP

To drive nails into plaster or soft wood readily and without splitting the wood or cracking the plaster, dip them in melted paraffin. Any kind of thick grease helps, but the paraffin is much better.

LIVE STOCK

BETTER CARE OF SOW AND HER LITTER

By Dr. W. E. Carroll.

The campaign now being waged nationally for increased pork production is a most vital one, but it cannot be waged successfully unless better care is given the sow and her litter on the average farm.

Success in raising a litter of pigs depends largely upon the kind of start they are given in life. During the first two or three weeks after birth, pigs are best fed through their mother. If this is to be well done, a good milk flow in the sow is to be maintained.

The following conditions will stimulate high milk production in the brood sow during the summer months:

1. Supply an abundance of palatable, nutritious, succulent feed.
2. Provide plenty of cool, clean water both for drinking and for the wallow.
3. Make generous provision for plenty of shade.
4. Offer plenty of opportunity to take exercise.
5. Keep clean and healthy and free from all lice and other parasites.

Where pasture is available many of the conditions mentioned above are met. Any pasture is good, but alfalfa is the best. The young tender al-

falfa is nutritious, palatable and juicy or succulent. The sow, however, cannot produce milk on alfalfa alone. Pigs have only one stomach and this is comparatively small. As the alfalfa contains a large amount of water and considerable coarse indigestible material, it is not possible for the sow to eat enough of it to enable her to produce much milk.

Where a well fenced pasture cannot be had, the sow and litter can frequently be allowed to run in the regular alfalfa field. There is not much danger of loss if the pigs are fed grain in a certain place twice a day.

Where pasture or alfalfa fields are not available, green alfalfa or weeds may be cut when young and tender and fed in the pen. This of course requires more work, but will be found nearly as good. Either method of feeding will be found to cut down the cost of the ration.

Skim milk or buttermilk where available can take the place of alfalfa pasture to good advantage.

The grain to feed in addition to the feeds mentioned above will depend largely on the relative prices of the various grains. Corn, ground barley, oats, or wheat are all good, but are frequently high priced, especially oats and wheat. Probably a mixture of bran and shorts in the proportion of about 1 to 3 will in most sections be the most economical grain at hand. This has the further advantage of being a by-product which is not suitable for human food.

The sow should be given enough grain in addition to the forage to keep her weight constant. This will vary with the sow, but from two to four pounds per day for each 100 pounds live weight of sow will probably be sufficient.

Table scraps of most all kinds can be fed to advantage. Potato peelings and many other vegetable parings, however, are not relished in very large quantities by pigs unless they are cooked.

Hogs do not sweat so their bodies must by some other means. They, therefore, take to a wallow as a boy takes to a swimming hole. Care should be taken to keep the wallow clean and supplied with fresh water. Plenty of clean fresh water for the pigs to drink is also essential.

In pastures where no trees or bushes are growing, a very inexpensive shade can be made by setting four corner posts to stand about 3½ feet above the ground and covering these with a flat roof or brush.

Sufficient exercise is essential not only for the sow, but is especially necessary to keep the young pigs in good condition.

Dirty as a pig is, a comparison which may be true generally, but pigs are dirty because man force them to be. People would also be dirty if they were forced to spend all their time in one small room. Give a hog that has not been badly trained a sensible roomy pen and note the care which he "keeps house."

Pigs are not only more apt to be more healthy in clean quarters, but parasites are less likely to infest them. Whenever lice are seen on pigs they should be sprayed with Kresol or some other substance which will kill all such parasites.

HOW TO PRODUCE HOGS AT A LOW COST

By Dr. W. E. Carroll, Utah Agricultural College.

Urging that more hogs be raised to help meet the present food shortage, a note of warning should be sounded in connection with the increased production of pork products. In times of promised food scarcity the slogan, "Raise More Hogs," is a wise one; but it may at the same time be a dangerous one. It is wise because the hog

is a very economical producer of human food, being surpassed in this regard only by the dairy cow. The point of danger comes when so many hogs are produced that they actually become a menace to the human food supply.

This may sound somewhat strange, but a moment's thought will show how this may occur. Hogs of necessity must be fed fairly concentrated feeds. This in many places means grain of one kind or another which could be used for human food, such as wheat, corn, or even barley. On the other hand if a small amount of these valuable grains can be used in connection with a large amount of waste products and rough feeds in the production of pork, then a real saving has been effected.

The advantages of raising hogs are many. They multiply rapidly and it takes but a short time to get into the business. Comparatively little capital is tied up and that which is invested is turned over rapidly, as hogs can be marketed when less than a year old. Probably the most attractive feature of the hog business is that it is profitable. Even under normal conditions hogs are paying property, and the prospects in the immediate future are double promising.

Hogs fit well into most systems of farming and should be made a part of practically all farms. They are safer as a side line than as a main business. More hogs can be grown with profit and safety on most Utah farms. They should, however, be made to produce most of their growth on waste products, pasture and cheap roughage. Most farms have more skim milk and buttermilk than can be used on the place as human food. These make excellent hog feeds. Table scraps should be completely used in this way. Bran, shorts and mill screenings are by-products that are not well adapted for human food, and no class of animals will make more gain in weight on these feeds than will the hog.

Tankage is a by-product of the slaughter house, which is now available to many Utah farmers at reasonable prices. It is a very concentrated food and one high in protein. For that reason it must be fed with care. It is fed to best advantage with corn, barley, and other feeds of low protein content. Young weeds from garden and field can also be converted into pork.

Pasture offers a splendid opportunity for the production of cheap pork. Any kind of pasture can be used, but alfalfa has proved the best. Clover is a close second while the grass pastures are not nearly so good. Grass pastures are better utilized by dairy cows. A small allowance of the more concentrated feeds is necessary for best utilization of the pasture. Two or three pounds per day for each 100 pounds of live hog will be found sufficient. Where feed barley is available this can well be a mixture of about equal parts of barley and shorts. Screenings alone (ground) or screenings and shorts can be used. Bran is rather bulky to be fed with pasture. This is also true of skim milk, though where this by-product is available at cheap prices considerable pork can be made on skim milk and pasture. Some grain will be needed, however, for fattening. During the winter a good grade of fine alfalfa hay can be used to replace the pasture.

Remember, hogs are economical producers of human food, but they must be made to do it on cheap feeds and by-products.

THE COST OF A 250-POUND PIG

By John M. Evvard, Iowa Experiment Station.

The cost of producing a pig will vary, depending upon such factors as the season, the feeds used, system of management, the price of feeds, the methods of feeding, the breed and others. Generally speaking, however, the cost under a definite set of conditions averages about the same one pe-

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riod of years as compared with another.

To take a pig from farrowing to 225 pounds in weight means that we feed him for a couple of months with his dam; and then after weaning, the rest of the time with his mates.

Some figures covering both these periods of development are to the point. The sows fed were gilts. They were fed a ration of shelled corn, plus 50 per cent as much of a mixture of middlings four parts and meat meal tankage one part. Or, to put it more plainly: 50 per cent as much of the supplementary mixture was fed as of corn, which was allowed according to appetite. The pigs were given both shelled corn and the supplement mixture in separate self-feeders arranged in a creep, they having all they wished at any time.

Seven of these gilts on alfalfa pasture suckling their spring litters started with 51 pigs and at the end of 60 days ended with 44, an average of 6.3 pigs saved with the sow. At weaning time these pigs averaged close to 30 pounds. Counting the total gain per group, that is the gain on the gilts (which really was a loss) plus the gain on the pigs, we find that for every 100 pounds of gain made there was fed 240 pounds of corn, 97 pounds of middlings and 24 pounds of tankage. This charges the loss of seven pigs that died, they dying early. In other words, it represents actually in practice how many pounds of feed it takes on alfalfa pasture to make a hundred pounds of gain on the swine. The pasture charges on each 100 pounds of gain made on the basis of a \$10.75 charge on the pasture was a little over 21 cents. On the basis of corn costing 50 cents, middlings \$29 per ton, tankage \$50 per ton and pasture, as stated, the total cost of 100 pounds gain was \$4.42. Inasmuch as these pigs weighed around two pounds at the beginning of the suckling period the total cost per pig weaned (not including the farrowing cost which really means the cost of carrying the sow through the pregnancy period) is \$1.24.

Now what is the record when the weaned pigs are placed on alfalfa pasture and allowed to hustle for themselves? The pigs were fed a 3 per cent shelled corn ration during the forage season, the alfalfa being splendid. Of meat meal tankage they received not quite two pounds daily on the average for the entire period. The meat meal tankage, however, was not fed while the alfalfa was exceptionally good, namely, from June to September. On November 15, at the end of the pasture season, the pigs weighed 196 pounds; at which time they were put on self-feeders in dry lot, they received corn and meat meal tankage separately. Here they continued for 22 days until they reached the 225-pound mark.

The feed required for 100 pounds gain was 389 pounds of shelled corn and 17 of meat meal tankage. Very little salt was consumed, or only .2 pound for each 100 pounds gain made. On the basis of feeds priced as above, the cost of grain and forage for 100 pounds gain was practically \$4. To make these 30-pound pigs, therefore, at weaning time weigh 225 pounds they would necessarily have to gain 195 pounds, which, at \$4 per hundred, would necessitate a cost of \$7.80.

Add the suckling cost of \$1.25 to the after weaning cost of \$7.80 and we have a total reed cost of \$9.04 to produce a 225-pound pig after farrowing.

Some of the records show that on the basis of 50-cent corn a new-born pig from gilts will cost approximately 40 cents. If seven are farrowed and six live, this will make the cost of the pigs that live 53 cents. Add this to the \$9.04 and we have a total cost of \$9.57 to cover the feed cost of a 225-pound pig, or \$4.21 a hundred pounds when corn costs 50 cents; meat meal tankage \$50, wheat middlings \$29 a ton and alfalfa pasture \$10.75 an acre.

Had these sows and pigs been self-fed during these periods of the pig's development the cost would have been a little less than the above figures.

SWEET CLOVER FOR POOR SOILS

It Is Valuable Forage Plant for Worn-out Pastures—Excellent Pasturage for Dairy Cattle, Hogs and Other Stock.

"Grow sweet clover" is the answer for poor soil or wornout pastures which no longer support livestock profitably, according to investigators of the United States Department of Agriculture, who have found that thousands of acres of sweet clover are furnishing annually abundant pasturage for all kinds of stock on soil where other crops made but little growth.

In many portions of the middle west sweet clover bids fair to solve serious pasturage problems. Native pastures, which no longer provided more than a scant living for a mature steer on four or five acres, when properly seeded to sweet clover, will produce sufficient forage to carry at least one animal to the acre throughout the season. Dairy cattle, horses, sheep and hogs all do well on sweet clover. Land which is too rough or too depleted for cultivation, or permanent pastures, which have become thin and weedy, may be improved greatly by drilling in after disking a few pounds of sweet clover seed per acre. Not only will the sweet clover add considerably to the quality and quantity of the pasturage, but the growth of the grasses will be improved by the addition of large quantities of humus and nitrogen to the soil.

Sweet clover has proved to be an excellent pasturage crop on many of the best farms in the north-central states. In this part of the country it is often seeded alone and pastured from the middle or the latter part of June until frost, or it may be sown with grain and pastured after harvest.

NEW COUNTY AGENTS

The growth of agriculture in Utah can be judged by the number of county agents. Three new ones are just announced by Dr. R. J. Evans, state leader in this work.

Robert L. Wrigley was appointed to act in Cache county. Mr. Wrigley graduated from the Utah Agricultural college in 1911. The four years spent in Cache county as a student, and the year following, when he taught at the Lewiston high school in North Cache, put him in command of agricultural conditions in this county. From 1912 to 1916 Mr. Wrigley spent as instructor in agriculture at the Branch Agricultural college at Cedar City.

Theron W. Bennion received the appointment as county agent for San Pete county. Mr. Bennion graduated from the Utah Agricultural college in 1913. Since then he has taught agriculture in the Moroni and the Lehi high schools.

The two counties of Summit and Morgan have co-operated in securing a county agent, and Aaron F. Bracken has been appointed to work in this district. Mr. Bracken has had wide experience in agriculture field work. He graduated from the Utah Agricultural college in 1914. He conducted agricultural experiment work at the sub-experiment station at Nephi, and leaves a position on the college faculty to accept his new duties.

With the appointment of these three new agents, Utah now has fourteen county agents working in the following seventeen counties: Cache, Box Elder, Morgan and Summit, Salt Lake, Weber, Utah, Duchesne and Uintah, Carbon and Emery, San Pete, Millard, Sevier, Beaver, Iron, and San Juan. Two of the counties, Weber and Box Elder, have assistant county agents as well.

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Several hundred letters were sent to our subscribers a few days ago. Many have answered. We would like, however, to remind the ones who were so busy at the time they could not answer to send their reply now. We are keeping a check on every letter sent out and want to get just as many replies as possible.

Did you get the letter, or did someone bring it in and lay it down waiting until you came home in the evening?

By the way—what do you think of our new, big paper? Many of our readers have complimented us on the improvements. We would like your opinion. Your suggestions on how we can make it even better. We want to do our "bit" and help you in every way possible to produce a big crop to feed ourselves and those who are not blessed as we are this year with good crops.

You have a chance to make more money this year than ever before and still be helping in the great war for humanity and democracy.

Find the letter and send us your reply today.

Utah Farmer

Lehi, Utah

Preservation of Vegetables Without Canning

By William v. Cruess.

We have become so accustomed to using vegetables from cans (or fresh) that we do not realize that they can be successfully preserved in a palatable and nutritious form by other methods. The scarcity of tin cans and glass jars makes it imperative that these other methods be used this season if any great quantity of vegetables is to be kept for use next winter.

The can factories report that no cans are available for home canning and that the large canneries themselves may not have enough for their own needs.

The methods described below are not especially new, but it is believed that they are not all generally known. They are very simple, cheap, effective, and can be used from the smallest to the largest scale.

Drying Vegetables

All root vegetables, such as potatoes, carrots, turnips, beets, etc., can be dried successfully by exposing them on trays to the sun. The vegetables should first be washed, peeled if necessary, cut into pieces about one-fourth of an inch thick, spread on trays or sheets of paper, and exposed to the sun until dry. Potatoes, carrots, turnips, and beets will dry in this way in two to four days. Onions require longer.

The appearance and general quality of all these root vegetables (especially potatoes) can be improved, the rate of drying can be increased, and molding during drying in foggy weather can be avoided if the vegetables are exposed to the fumes of burning sulphur a short time before drying. An ordinary fruit sulphuring box may be used for this purpose. If one of these is not available, the cut vegetables may be sulphured by exposing them on trays to the fumes of burning sulphur in any fairly tight room or box. A box may be constructed of rough boards and covered with building paper to make it fairly air tight. Cleats may be nailed to the inside walls to hold the trays during sulphuring. The box is made without a floor and one side is made into a door to admit trays. A hole about a foot square and twelve to ten inches deep is dug in the ground at one end of the box. A pan of burning sulphur is placed in this hole after the trays have been stacked in the box. The door is closed and the vegetables left until sufficiently sulphured. The time necessary is from ten to twenty minutes. The sulphured vegetables are then exposed to the sun on trays or paper till dry.

Peas and string beans should not be sulphured because of the bleaching action of sulphur fumes. Peas should be shelled and string beans should be strung before placing them on trays. They both dry rapidly.

Corn is cut from the cob and dried on trays very successfully.

The dried vegetables must be kept in covered crocks or tight boxes or heavy sacks to prevent insect injury. Before being used for cooking, the dried vegetables must be soaked in water about twenty-four hours. They may then be cooked and served in ways similar to those used for fresh vegetables. By proper seasoning and preparation, dried vegetables can be made into palatable dishes. Their nutritive value is not perceptibly changed by drying.

By Salting

Wash, peel, and cut the vegetables into pieces about one-fourth inch thick. Weigh them. Weigh out one pound of salt to each three pounds of vegetables. Place a thin layer of salt in the bottom of a crock or barrel or wooden bucket in which the vegetables are to be stored. Then build the vegetables and salt up in alternate layers until the container is full, using one pound of salt to three pounds

of vegetables. Cover the vegetables with a layer of salt. Place a piece of wood on top of the vegetables and a heavy weight on the piece of wood. In twenty-four hours the vegetables will be found covered with a heavy brine formed by the salt and the juice from the vegetables. The vegetables will have greatly decreased in bulk. More sliced vegetables and salt in the ratio of one pound of salt to three of vegetables may be added to fill the jar or barrel and pressure applied again. Keep the vegetables immersed in this brine by means of a light wooden weight until they are to be used. If they show signs of spoiling add more salt. Before cooking, soak out the excess salt as is done with salt fish or parboil a short time for the same purpose.

Do not use metal containers because the metal will dissolve in the brine. Use crocks or barrels or other wooden containers.

In Brine

Make a saturated brine by stirring three and one-half to four pounds of salt in a gallon of water. If it does not all dissolve at once, leave it in the liquid because it will dissolve when the vegetables are added later. Wash the vegetables. Slicing is not necessary. Place them in the brine and keep immersed by wooden weights, until needed. If signs of spoilage are noticed at any time, add more salt.

Vegetables may be kept in salt or brine indefinitely and make good substitutes for the canned or fresh vegetables. The most expensive grade of salt is not needed. It would pay communities to buy salt in ton or half ton lots if any large quantity of vegetables are to be put down in salt or brine. It will cost not more than \$8 per ton f. o. b. factory if bought in this way. The cost for salt under these conditions would be not more than one-fourth cent per pound of vegetables.

FEEDING WORK HORSES

By William Hislop.

In feeding working horses it must be remembered that the storage capacity of their digestive apparatus is not adapted to the consumption of large quantities of bulky feed. They are built on entirely different lines than ruminants. In order to obtain sufficient nutriment from hay alone it would be necessary for a 1,400-pound horse doing heavy work, to consume 40 pounds daily. He has neither the time nor the energy to do so. Maximum efficiency cannot be obtained from draft horses unless the larger part of their energy comes from concentrated feeding stuffs.

Suggested daily rations for 1,200 and 1,300-pound horses doing moderately heavy work:

1. Twelve pounds timothy or ten pounds alfalfa hay, fourteen pounds oats.
2. Twelve pounds timothy or ten pounds alfalfa hay, thirteen pounds oats and corn, equal parts by weight.
3. Twelve pounds timothy or ten pounds alfalfa hay, thirteen pounds oats and barley, equal parts by weight.
4. Ten pounds wheat hay, thirteen pounds oats.
5. Ten pounds wheat hay, nine pounds oats, three pounds bran.

Should the work become more severe any increase in the amount of the ration should fall on the grain and not on the hay. Likewise, it should be borne in mind that to perform an equal amount of work, an old horse demands higher feeding that does a young horse; similarly, the condition of the roads should be considered in determining the amount of feed given. It is impossible to state a hard and

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

IDAHO FARMERS

We have some excellent sage brush lands near Fillmore in southern Utah that can be had for \$15 to \$20 per acre. This property is located in a section of about 16 inches rainfall and in addition has the best of prospects for developing artesian water. The winters are milder than those of Idaho and the growing season is longer. No frosts that are destructive to the ordinary crops. It is just the thing you are looking for to give your boys a start.

UTAH FARMERS

If you are contemplating going into the southern Idaho country to locate, consult us before buying. We have some choice listings of improved farms around Pocatello and Blackfoot which we know will interest you. In some cases the growing crop at present prices will go a long way toward paying for the entire place. The values range from \$60 to \$125 per acre and they are all good.

FARM FOR SALT LAKE HOME

We have a 45-acre farm on Provo Bench with fully paid up water right. Good clay loam soil. The place is in alfalfa, sugar beets and has some apples. Owner will trade for good Salt Lake home.

CATTLE RANCH

280 acres with good independent water right; no assessments on water; 100 acres of grain, 40 acres of alfalfa, good meadow and pasture land; excellent range adjoining carrying reserve rights; 50 head of cattle go with the place. Property improved with good houses and barns and equipped with farm implements. Price \$17,500. One-fourth down, balance easy terms. This is a bargain.

ASHTON-JENKINS COMPANY,

47 Main Street,
Salt Lake City.

IDAHO RANCHES

120-acre irrigated ranch in best part of Idaho, seven mile from county seat and railroad; good ditches, 5-room house, barns, sheds, granaries, etc.; 95 acres alfalfa, 25 acres pasture, 40 acres fenced for hogs; place yields splendid crop; 8 head cows, 4 head of horses, 4 young heifers, machinery, etc. Price complete \$8,500. Terms, one-half down.

We have many such bargains on good terms. Write us.

FEDERAL LAND COMPANY, Ogden, Utah

A FARMER SPEAKS

I am very well acquainted with values in Millard county, having lived here all my life. There are some of the best buys down here that can be found in the inter-mountain country. The water rights are A1 and the land is very productive. A sugar factory is being built and values are going up. I can get you improved or unimproved farms. People haven't awakened to the possibilities of this section. Nels L. Peterson, Deseret, Utah.

An opportunity for the right party is a fifty-acre farm at Elberta, Utah, suitable for the growing of alfalfa, fruit, beets, grain, garden truck or any other farm products. The best kind of soil, with good water right at a reasonable rate. This property adjoins a good school and is located on a railroad. Will take \$3,750 for this place, with suitable terms for payment. This is a real buy for the man that wants a small farm at a good price.

For \$75.00 an acre you can buy 50 acres of Elberta's fertile land, with prior water right at \$1.00 an acre. What do you think of this buy. If you are looking for a small farm at a low price, investigate this further. We will be glad to furnish you with more information.

We are dealers in farm lands. Write us your wants.

W. C. ALBERTSON

604 Dooly Bldg.
Salt Lake City

fast mechanical rule whereby work horses may be led. A good horse-feeder is an artist who reads the signs of the times in the spirit and "feel" of his charges and governs the quantity and quality of the daily ration accordingly.

RELIABLE FARM BARGAINS

We have one of the most beautiful country homes, on forty acres of land, in this part of the country. This property is situated on the main highway and also on the car line. Can be had for a very reasonable price and will consider some Salt Lake City property in exchange. A modern 8-room house, beautiful trees, some of the nicest fruit of all varieties, large shade trees, hay, grain and garden stuff.

We have in the Bear River Valley one or two farms for sale at the present time that can be rented for spot cash and will pay interest on \$125 per acre more than we are asking. The farm can be bought at one-fourth down, ten years on the balance at 6 per cent interest.

300 acres of alfalfa ground in Cache Valley. This land will cut this year from 4 to 6 tons of alfalfa. This land can be had on a small payment down and ten years on the balance. We have immediately adjoining this land some beautiful pasture land, also nice home with spring water piped to the house. If you are looking for a dairy proposition, for alfalfa, sugar beet or grain land, this will certainly appeal to you. If you have a small payment and wish the farm to pay for itself, this is what you are looking for.

Right near the town of Tremonton, we have a first-class farm which can be purchased for 10 per cent down and ten years to pay the balance. A beautiful home, shade trees and orchard; 40 acres into alfalfa, balance in grain. Can be delivered to you immediately or can be farmed until next fall by the present lessees.

On 14th South, on 5c car line, we have some beautiful one-acre tracts. Can sell one or more acres for \$450 per acre. Small payment down and ten years on the balance at 6 per cent interest.

We have several first-class cattle ranches, including first-class stock of all descriptions. These properties can be had on easy terms.

In southern Idaho we have 40, 80 and 160-acre tracts of land that we are selling. This land belongs to a big syndicate in Boston, and they have authorized us to sell this regardless of price. If you are looking for a farm in southern Idaho on the main line of the Oregon Short Line, near a good town, we can suit you as to location, price and terms.

We exchange farms for city property and city property for farms.

KIMBALL & RICHARDS,

"Land Merchants,"
52-54 Main St.,
Salt Lake City, Utah.

Phone—Wasatch 963.

FARM AND RANCH DEPARTMENT

FREE FARM LANDS

The Pohoant Valley in Utah needs 10 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah

THE FARMERS' MARKET PLACE

For the Buyer

This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

BARGAIN

One 28-inch Minneapolis Separator with self-feeder and wind stacker, and one gasoline tractor at a sacrifice. Both in good condition.

SAM PETERSON & SONS CO.,
147 S. State St., Salt Lake City, Utah.

GROWING OF BEETS IS BENEFIT TO YOUR FARM

Besides providing an absolutely cash crop, a certain market, the growing of sugar beets, the Utah and Idaho, also provides one of the best means of fertilization through crop rotation. Agricultural experts agree that root crops are essential in good farming—sugar beets provide the safest, surest, cash producing crops of its kind.

USE TABLE AND PRESERVING SUGAR

SAVE MONEY ON YOUR LUMBER
BILL. WRITE US. PACIFIC COAST
SAWMILL COMPANY, Portland, Oregon.

Hatching Eggs 20% Off.

A few White Leghorn Breeders at half January prices.

BATES & SON, GUHAMA FARM
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Idaho harvester, almost new, first-class condition, for sale by parties who have disposed of their business. Will be sold at a bargain. All on time with approved security.

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Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

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for hatching for balance of season, from Four Best Laying Strains Rose Comb R. I. Reds and White Wyandotts, Single Comb Black Minorcas and White Leghorns. Egg Fertility Guaranteed. Call or Write

E. C. BLANPIED,
Box 29, Milford, Utah.

ALFALFA STACK FLOORS

By Joseph E. Wilson.

A suggestion is offered to farmers along the lines of caring for lucerne stacks and preventing waste.

Waste and loss arise from several causes, among which are moisture arising from the ground under stacks, pigs, calves and other animals tramping the hay under foot around the stacks and rain sinking down on top of the stacks.

Where roofs cannot be provided, tarpaulins will prove a matter of economy. Then some suitable floor should be provided on which to place the stack. This is coming to be a cement age. A concrete floor graded high enough to keep it dry is easily constructed and need not require much outlay except in labor at convenient times. The earth should first form a level floor and be tamped firm. After which about three inches of concrete made to the following formula will be found durable and strong enough for any ordinary usage of this kind:

Three parts sharp sand, free from dirt; five parts clean gravel, no large stones; one part cement.

Mix thoroughly and add water to make a mortar and lay evenly, first providing a retaining form about the edges. If the mixture is wet enough the cement will float to the top as it is tamped down level so it can be smoothed off into a good hard surface. A little mixture of finer and richer material can be provided and used as necessary in troweling and finishing. When set, cover with fine sand and keep damp for two days.

A dwarf wall at the sides, about two or more feet high, will be found valuable, and should tarpaulins be used a few iron rings anchored in the wall will prove very advantageous.

In raising lucerne for hay the stand should be thick enough so that the stocks will not grow large and tough. By consulting specialists one can learn how to provide a proper seedbed and what quantity of seed to drill per acre to produce a good even stand for quality and quantity.

The ever-increasing demand for lucerne of the best quality calls for skill in cultivation and handling this staple crop. Waste should be eliminated as far as practicable and the flavor preserved and the revenues arising from an acre could be easily doubled.

MANY TRACTORS WILL BE USED

By William Olsen.

The best tractor authorities in America estimate that there will be over 100,000 tractors in actual use by the end of this year. Yet there are thousands of farmers who still believe that the tractor will never be perfected to a point where it will be a profitable addition to the equipment of the small farm of 80 to 250 acres. This most certainly is a mistaken idea, because even now there are tractors on the market which are fitted for use on the smaller farms and will prove a most profitable investment.

People once said the steam engine was an impossibility; that the tele-

Duroc Jersey Boars

Boars chuck full of Grand Champion Breeding. Bred the same way as our Utah State Fair Winners. We have a great lot of top spring Boars and are offering them at bargain prices. Every Boar guaranteed to please or money refunded.

Write us today.

RICHARDS LIVE STOCK CO.
Virginia Idaho
The West's Best Durocs.

phone would never be of practical use; that Darias Green's experience with his flying machine spelled defeat for aerial navigation, but nevertheless all these things are now accepted as a matter of everyday life.

How much simpler and more probable then is the small tractor of light weight, which can be operated by one man as easily as a team—that will do a large percentage of the work that horses now do so you can eliminate most of your horses. A tractor which will cultivate as well as plow; that will disc, harrow, run the mower and binder, besides doing dozens of belt-work jobs.

There's the point. The small farmer can't profitably keep both a tractor and horses, so the tractor to be a success on the farm of 80 to 250 acres must do a large percentage, or still better, do all the farm work without horses.

When a tractor like this is offered to the small farmer he will recognize its great advantages instantly, he will want it without argument, because it will mean to him that the drudgery and most of the drawbacks of farming will be eliminated and that a new day has dawned which will mean bigger crops, greater profits and more pleasures in farm life than the farmer has ever before known.

CONSIDER THE BEES

If you had to take a brush and fertilize all your fruit blooms, wouldn't it be a job? Yet here is the busiest spirit in the universe, whose whole social life, structure, and ideal, is to gather honey and pollen, thus carrying fertility to plants. Are you using the bees? Of course, wild ones will do their utmost, but why not have your hives in the orchard? We read the words of an apple-grower the other day who said he had materially increased the yield from his trees by putting the bee hives all through the orchard instead of lining them up in one place. On the cold days of spring the bees may not fly very far, so it is wisdom to put them near all the trees for their help.

We need not mention that the bees produce a by-product, delicious and valuable. No need, we repeat, that bee culture is not the ticklish, disagreeable thing it has long been rumored to be. With the right types of bees, handled gently and skillfully, the apiary is not a dangerous place, but the most inspiring factory of good things in the world. The study of bees is not without sound moral and social lessons, too.

SUBSTITUTE FOR HOT WATER BAG

Get some clean fine sand, and dry it well. Heat it on the stove, and put it in a flannel bag about eight inches square. Sew the opening, and cover with cloth. This will prevent the sand from sifting out, and enable you to heat the bag quickly by placing it in the oven of the stove. The sand holds the heat a long time, and the bag can be tucked to the back without hurting the invalid.

Grasshoppers Succumb To Poisoned Bait

Farmers need no longer be helpless against the ravages of grasshopper hordes in their fields. If discovered in the early days of their attack, these pests are now quite easy of control by means of poisoned baits, the most effective of which is described below. This method has been used with remarkable success in many parts of the United States, its complete effectiveness depending only upon the discovery of the young insects before they have attained any considerable size, when the injury done by them is still very slight and when they are wingless and easily killed by poisons or mechanical means. The United States Department of Agriculture tells how to make and apply this bait, as follows:

The constituents are wheat bran, 25 pounds; Paris green, 1 pound, or white arsenic, 1 pound; lemons or oranges, 6 finely chopped; low-grade molasses, such as refuse from sugar factories, or cattle molasses, known as "black strap," 2 quarts; water, 2 to 4 gallons. The bran and Paris green or other arsenical are thoroughly mixed while dry, the fruits finely chopped and added, and lastly the molasses and water are poured over the bait and the whole thoroughly kneaded. A coarse-flaked bran is most desirable, although where this cannot be obtained easily ordinary middlings or alfalfa meal may be substituted; a low-grade, strong-smelling syrup or molasses, however, is essential to the entire success of the poison. Crushed ripe tomatoes, watermelons or limes may be substituted for the lemons or oranges, if necessary. Ordinary powdered white arsenic (arsenious acid) contains nearly twice as much arsenic as Paris green and is comparatively low in price. The powdered form of arsenate of lead may be used, but in this case twice as much of it must be used as of the Paris green. In California and other semi-arid regions water should be added to the bait at the rate of at

least 4 gallons to 25 pounds of bran, as in these climates the bait dries out very rapidly and the extra moisture is necessary in order to attract the grasshoppers.

The poisoned-bran bait is distributed over the infested fields by sowing broadcast, either on foot or from a light wagon or buggy. In applying the bait in orchards, care must be taken to avoid distributing it close to the trees, because severe injury to fruit trees occasionally results from heavy applications of arsenical poisons.

The time of day chosen for distributing the poisoned baits has an important bearing upon the results secured. In California and other semi-arid regions the bait should be distributed in late afternoon or early evening, just before the grasshoppers ascend the plants on which they usually pass the night. They are apparently hungry and thirsty, at this time and greedily take the bait if it be available.

Farmers should not be discouraged if the grasshoppers do not drop dead immediately upon eating the poison, as it usually takes twenty-four hours or more for the full effect of the bait to become apparent.

HIS ANSWER

The teacher had been reading to the class about the great forests of America.

"And now, boys," she announced, "which one of you can tell me the pine that has the longest and sharpest needles?"

Up went a hand in the front row.

"Well, Tommy?"

"The porcupine."—Tit-Bits.

NOT SO BAD

Little Claire's next door neighbor fell downstairs and was so badly hurt that she was in bed for weeks. One day she heard her mother say, "Mrs. Marion is mending rapidly now." In a few days Claire came and said, "Mother, Mrs. Marion just keeps darn- ing every day now, doesn't she?"

Perennials and Annuals

By Emil Hansen, Utah Agricultural College.

Perennials are those plants whose tops die during the winter, but whose roots live from year to year. Some of these hardy plants begin to bloom in the early spring, and by having different varieties of these old-fashioned flowers one can have flowers continuously throughout the summer and fall. When the plants grow to be too large they can be dug up, divided and replanted. The best time for planting is in the fall or early spring. The soil should be dug to depth of about 18 inches and thoroughly mixed with well-rotted manure. After planting the bed should be covered with manure every fall. This should be dug down amongst the plants in the early spring. To make an absolute success with perennials only varieties known to be hardy and adapted for this climate should be selected. The following list includes a few which are to be recommended:

Botanical Name	Common Name	Month Blooming	Color
Aconitum napelus	Monkhood	July-September	Blue
Althea	Hollyhock	June-September	Various
Aquilegia, in variety	Wind Flower	April-September	Various
Anemone, in variety	Columbine	April-September	Various
Campanula, in variety	Bell Flower	June-September	Various
Chrysanthemum	Chrysanthemum	August-September	Various
Coreopsis grandiflora	Tick Seed	June-September	Yellow
Delphinium, in variety	Larkspur	June-September	Various
Digitalis, in variety	Fox Glove	June-July	Various
Dianthus, in variety	Pink	June-September	Various
Funkia subcordata	Plantain Lily	July-September	White
Iberis sempervirens	Candy Tuft	May-June	White
Iris, in variety	Flag	June-September	Various
Lilium, in variety	Lily	June-August	Various
Lobelia cardinalis	Cardinal flower	August-September	Scarlet
Lupinus polyphyllus	Lupine	June-July	Blue
Myosotis palustris	Forgetmenot	May-June	Blue
Peonies, in variety	Peony	May-June	Various
Papaver orientale	Poppies	May-June	Crimson
Papaver nudicaule	Poppies	May-September	Yellow
Phlox, in variety	Phlox	July-September	Various
Pyrethrum roseum	Feverfew	July-September	Red
Rudbeckia lacinated	Golden Glow	August-September	Yellow
Viola, in variety	Violets	April-May	Blue, white

Annuals

Annuals are frequently used for planting in flower beds, along borders, in rockeries, or in backyards for cut flowers. A great variety of colors as well as different sizes can be had amongst the annuals.

Some of these varieties can be planted direct in the garden in the early spring as soon as the ground is dry enough to be worked and the soil easily pulverized. The seed should be sown at depths varying with the variety used, but directions for the same are given on all seed packages.

For certain varieties it is necessary to plant the seed in boxes or pots indoors in order that they reach maturity in one season. The boxes used for this purpose should be from 2½ to 3 inches deep and supplied with holes in the bottom for drainage. These holes can be covered with rocks or pieces of broken pots, or other material, which does not prevent the water from going through. The soil mixture recommended for such planting is as follows:

Fine soil (leadmold or mountain soil), 3 parts; screened sand, 1 part.

After filling the boxes or pots, level and press the soil firmly with a piece of flat board, after which the seed can be sown and covered with a fine sifted soil mixture to a depth of about four times the thickness of the seed, providing different directions are not given on the package containing the seed. The top soil should again be leveled without removing the seeds and pressed down firmly with the board and then watered with a fine sprinkler. Care should be observed in watering not to wash the soil. The box or pot should be placed in a sunny window near the glass and covered with a piece of glass, and the glass covered with a newspaper until the seeds have started to grow. Then the covering should be removed. If this is not done the small seedlings will be smothered. Water should be applied as often as necessary, the soil never being allowed to become very dry. When the plants have reached the size where they have from two to three leaves, they should be trans-

planted into another box or pot.

The distance between each plant should vary according to the size of the plant, but from 1 to 1½ inches will be the average. When transplanting, have the soil neither too wet nor too dry. Make the hole with a pointed round stick large enough to permit the roots of the plant to go down easily without doubling up. Then press the soil firmly around the plants, taking care that no space for air is left around the roots. The plants can remain in the box or pot until weather conditions are such that they can be planted out in the open ground.

To assist in selecting varieties of annual seeds the writer has arranged the following desirable kinds:

Varities to be planted indoors in boxes or pots—Asters, ageratum, sweet alyssum, antirrhinum, balsam, colosia cosmos, dianthus chienensis, gypsophilla, tagetes, myosotis alpes-

tris, pansy, petunia, phlox, salvai, scabiosa, stocks, sunflowers, verbena and zinnia.

Varities to be planted outdoors in early spring—Calendula, Centaurea cyanus, convolvulus, California poppies (Eschscholtzia), Mignonette, nasturtium, poppies and sweet peas.

WHEN IT IS TOO LATE FOR CORN, PLANT KAFFIR

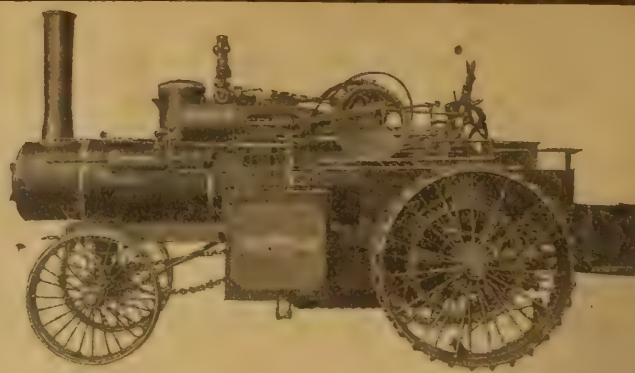
When it is too late for corn, plant kaffir. Kaffir sorghum is earlier maturing than the ordinary varieties of dent corn and is better able to withstand heat and drouth.

In yield and feeding value kaffir compares favorably with corn. Yields of grain may range from 20 bushels per acre to as high as 75 bushels under exceptional conditions. Yields of silage will usually range between 8 and 12 tons per acre. In feeding value 100 pounds of kaffir grain is considered equal to 80 or 90 pounds of corn.

There are many varieties of kaffir, and other grain sorghums, but the black-hulled white kaffir is usually the best. This variety may be seeded, 4 to 8 pounds per acre, 2 to 4 weeks after corn planting time is past. The plants should stand from 3 to 9 inches apart in the row, depending upon soil conditions. Special plates for seeding kaffir can usually be secured for corn planting machinery.

Soil preparation and cultivation for kaffir should be about the same as for corn, except that the young kaffir plants are less injured by the harrow or weeder than young corn plants. The common opinion that kaffir is "hard on the land" is due to the cloddy condition of the soil sometimes following the growth of the crop. This condition is caused by the shallow root system of the plant and the exhaustion of the surface moisture. Fall plowing and manuring of kaffir land does much to correct this temporary bad effect.

When the growth of the kaffir or sorghum plants is stunted by dry, hot weather or when a weak second growth occurs, stock poisoning may result if the fields are pastured. This poisoning is due to the formation of prussic acid in the stunted plants. The poison disappears with the return of fa-

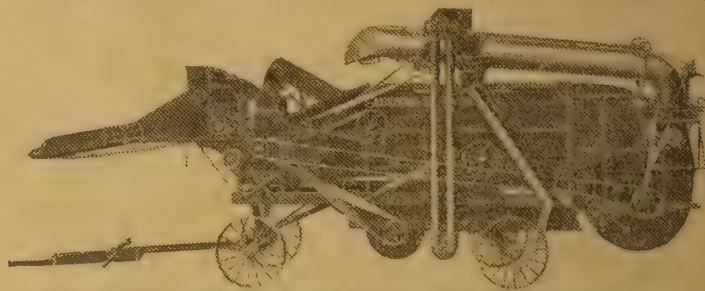


ANNOUNCEMENT

Here's good news for you. We are pleased to announce that we have opened a branch house in Salt Lake City, where we will aim to carry a complete line of Aultman-Taylor Kerosene Tractors, Steam Traction Engines, New Century Threshers, Matchless Clover and Alfalfa Hullers, Pea and Bean Hullers, Saw Mills, together with a complete stock of extras.

We know you will rejoice at this news. Many of you have wanted Aultman-Taylor Machinery. Now you have the opportunity to get what you want. The next time you are in Salt Lake City, do not fail to call at our branch and get acquainted with the management.

More good news to follow. Watch for our advertisements in this paper each week. In the meantime, write for catalog to



THE AULTMAN & TAYLOR MACHINERY CO.,
Dept. 2, Mansfield, Ohio.
Salt Lake City Branch, 525 West First South Street.
Chas. H. Dobson, Manager.

Are You A Fit or Misfit?

Are you planning to push a pen when you are better fitted to work in the sunshine planting corn?

Are you shoveling coal when you ought to be inventing machinery? Are you working on the farm when you could do better selling goods?

Many fail because they are not doing the kind of work for which they are suited. Are you in this class?

These problems should be solved. You should find yourself. Read Dr. F. S. Harris' new book,

The Young Man and His Vocation

It is brim full of practical ideas and suggestions for every young man.

It will help you understand yourself better; your possibilities, your limitations.

The industrial demands of modern life are explained and the reader is shown how he can meet these demands. The opportunities and requirements in each kind of work are discussed in such a way that the young man is materially aided in selecting his life's work and in preparing himself for it.

It will help you choose a suitable vocation, and get the most out of life.

Order one of these books for yourself or boy.

Send \$1.25 Today to

THE UTAH FARMER BOOK DEPARTMENT
Lehi, Utah

avorable growing weather or with the curing of the crop as hay or silage.

In sections too dry and hot for the successful growth of dent corn or where for any reason the corn crop is a failure, kaffir may well be used as a substitute.

A BAKING HINT

Keep a sheet of sandpaper in a convenient place in the kitchen. It will be found most useful to remove the burnt outside from bread or cakes by a few gentle rubs.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

VOLUME XIII, NO. 47

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH

JUNE 30, 1917

SAVING FEED BY MEANS OF A SILO

By Evan Russell.

I wonder what some of the "old-timers" are going to say about the silo now? They had their turn and for years we built very few silos in this state. Conditions have changed and so has the sentiment towards the silo. The experiments that have been conducted and the practical use of them by farmers the past year or two has demonstrated their economic value and, more silos will be built this year than for the past five years, if talk is anything to go by.

In the feeding of our ensilage last winter we feel we have many things to learn, as it is new to us. We kept a very careful account of our feeding and we are sure of one thing, that we saved money because of the 100-ton silo we filled last fall.

Some of our dairymen and livestock producers have not learned that the feed account enters into the profit and loss account. Of course this came home strongly last winter when hay went up to extremely high prices.

What seems to me as of much importance as the first cost of the feed is the results of production. To make my point plain, we increased our milk products about 15 per cent when we began using ensilage, and I believe that it helps to keep our cows in better physical condition. Of course, one must know how to feed silage to get best results. With alfalfa and ensilage we have a balanced ration that is hard to beat, and one that can be produced as cheaply here as anywhere. With the silo we have a way of storing our feed that is not damaged by the weather, and much less waste to it than hay, unless the hay is put away in a barn or good covering.

Another thing that worked out in our case was the way the corn crop and harvesting of it fit into our other farm work. Corn makes a good rotation and can be grown where many other crops could not be used.

Livestock of all kinds will always be an important part of our agriculture. It must be for a number of reasons, and the thing for us to do is to plan how economically we can feed our livestock. We cannot afford to be caught another time like last winter, and the silo is the one big thing that will help.

Corn is not the only crop that can be made into ensilage, if

some of the reports are true. Good feed is made of several sorghum varieties, sunflowers, peas and oats and other crops.

Many suggestions are being offered to the farmer as to what he should do, but I believe we are awake to the conditions, and each of us must solve our own problems.

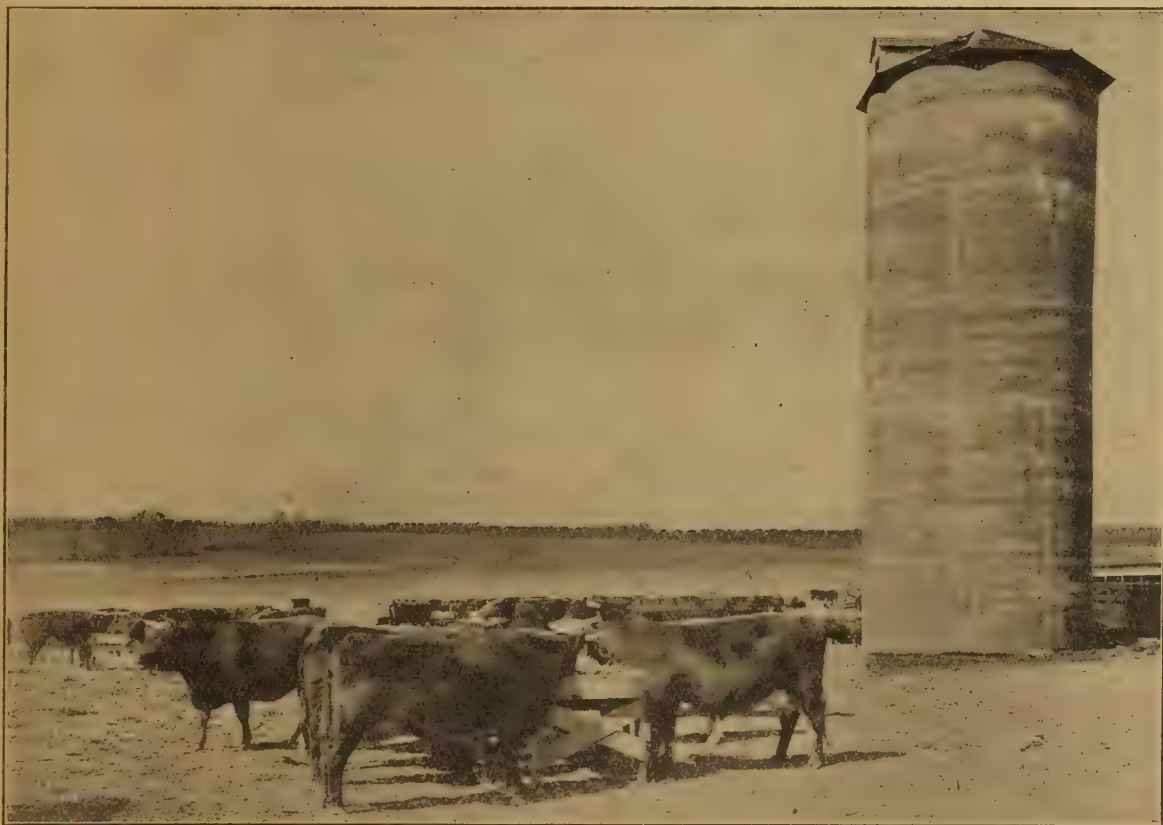
The silo is no longer an unknown help to the farmer, for it has passed the experimental stage, and we can safely recommend it to other farmers as a good thing. This, of course, applies to the man who has, or can, get livestock to feed ensilage, too. One Eastern farmer said he could pick out the most prosperous section of our state by the number of silos we had on our farms. The saving of our feed for our livestock is a big problem, and the silo is a means

of helping more than any other one thing that has come to the farmer in many years. In the state of Washington the bankers have become so converted to the silo that they are loaning money without interest until harvest time to help the farmers build silos.

We were able to produce several tons more per acre of corn than we have been getting of alfalfa, and as we learn more about producing corn we will be able to increase our tonnage per acre. Corn fits well into our rotation, and if we can increase our number of livestock on the farm it will help us to keep up the fertility of our farm.

There is little or no waste in the feeding of ensilage as we did it last winter, combining it with alfalfa. We soon learned the amount our stock would eat up clean.

Our government is emphasizing the need of conserving all the human and animal food possible. The silo is one of the best methods to properly care for our animal feed. Livestock of all kinds are important factors in our food production. When we have a method of saving our animal food, like we have in the silo, we are helping to increase food products. This increased production and saving means more profit for the farmer. Once the silo is built, there is little or no cost of "upkeep." If the silo is properly built it will last for years. It is the first cost in the building of it that counts. For this reason it is important to do it well.



CULTIVATION INCREASES YIELD

Greater Production Means More Money to You and Better Service to the Nation

SUGAR BEETS

Suggestions to Our Beet Growers

By Mark Austin.

Most of our farmers have excellent stands of beets well cultivated, thinned and hoed and free from weeds, and generally they are in excellent condition and are growing rapidly. However, there are a few farmers neglecting their cultivating, and hoeing, and just a few neglecting their thinning.

What we want to urge upon those farmers, whose crops are not in first-class condition, is more cultivating and the cleaning out of the weeds at once, so as to give the beets an opportunity to make tonnage. One or two tons per acre lost, which will be the case on some few fields, will pay for a great deal of cultivating and hoeing. If it is impossible for a farmer to do it, he can well afford to hire someone to do the work, because in many cases he will save \$10 to \$15 per acre, by having the work done at the proper time. In other words, it never pays to neglect a crop of beets, and now that the season is short the beets should not be hindered in their growth in any way. Most of the beet lands have plenty of moisture, but there are a few acres planted on sandy and gravelly land which have become dry and need water and they should have it at once where needed. It is a shame to let them dry up, especially since there is plenty of water available. Of course, the farmers should use great care and not water beets before they need it, but they should not be allowed to suffer for water at any time; neither should they be over-irrigated at any time. Simply keep them in a moist, healthy growing condition. Each and every farmer will have to be the judge of his own land and the soil and climatic conditions of course will regulate the time of irrigation and quantity of water needed.

A few days late in the application of any of the work above mentioned very often makes a serious loss to the farmer and usually costs more. It is always cheaper to perform work relative to farming in the season thereof. There is no doubt but that each cultivation given to the beets, when needed, will add one ton per acre; likewise hoeing, and if the beets are kept well cultivated and free from weeds, on a great deal of the land, it will not be necessary to irrigate as soon as otherwise.

I thought I would call these matters to the attention of the farmers, because in most cases we have an excellent showing for a good crop. It is largely up to the farmers as to the tonnage they get, and these very, very important matters should have his careful and serious attention.

BEET GROWING HAS HELPED DENMARK

By Mads Anderson.

The Danish sugar industry has been developed with a view to supplying the national needs in the matter of sugar, and in less than forty years it has changed Danish agriculture from its earlier system of growing grain for market to a stock and dairy basis, which enables it to export a large amount of valuable dairy products. This has brought about a great increase in the wealth and resources of the farmers, and the beet sugar industry is largely responsible for it. In addition it has served to make Denmark independent of foreign sugar in normal years.

Prior to 1881, Denmark was entirely dependent upon foreign countries for its sugar and syrup supply. In that year, however, the first beet sugar factory was erected at Odense and an active campaign was carried on in an

effort to get the Danish farmers to grow sugar beets. At the start it was found impossible to get them to do so except in a few cases, and as a result the sugar company had to rent land and raise its own raw material.

First Results Successful

In the early days of the industry the land was prepared for the beets by spading, which required a great deal of labor. Nevertheless, the factory managed to get hundreds of acres spaded up by hand to a depth of from 20 to 24 inches. In the spring the land was well manured and an excellent seedbed was prepared. So successful were the results from the first year's crop that the sugar company was assured that Denmark could become a sugar producing country, rather than a sugar importing country, as had been the case previously. The crops which followed the beets showed a large increase in yield, thus causing the farmers to take notice. Within a short period hundreds of farmers made application to the sugar company for ten-year beet growing contracts.

The matter of feeding the pulp to cattle was the next important step which the sugar company had to demonstrate to the farmers. Various tests were conducted, and it was found that the pulp was an excellent cattle food, especially for dairy cows. This gradually led to the feeding of sugar beet tops, leaves and pulp and to the introduction of stock beets for feeding purposes. As a result the farmers were enabled almost to double their dairy herds. The records show that in the period since that time, due to the increased milk flow resulting from these various varieties of feed, the butter production per cow per year has increased from an average of 110 pounds to 235 pounds. The butter production of the country has increased tremendously.

Every village in Denmark has its co-operative creamery, and no money has been spared in equipping these community units. Danish butter finds a ready market in England. The shipping is mostly done through local and national shipping associations. The doubling of the dairy herds, by providing the farmers with an ample supply of inexpensive fertilizer, has greatly increased the fertility of the land, so that Denmark has become almost a model agricultural country, and its methods are studied with great interest by agricultural scientists and practical farmers from other lands. While it would not be fair, perhaps, to attribute this progress entirely to the beet sugar industry, it cannot be denied that the development of sugar beet growing has played a very large part in it, and the industry has amply demonstrated its great value to the farmer.

PLANT PUMPKINS IN CORN

Pumpkins planted in corn furnish a cheap appetizing stock feed. They should be planted by the latter part of June, putting a pumpkin seed in every sixth hill and in every missing corn hill. Pumpkins will affect but slightly the stand of corn and a large amount of fine stock feed can be raised.

Pumpkins are relished by cattle and hogs. Fed, uncooked and with the seeds they act as an appetizer and corrective of digestive troubles. Two and one-half tons of uncooked pumpkins are equal to a ton of corn silage to cattle. It has been found that 273 pounds of grain and 376 pounds of pumpkins produced 100 pounds of pork, the pumpkins saving 100 to 150 pounds of grain. The low cost of growing, ease of keeping, large yields, and the tonic qualities of a succulent feed

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available when succulent hog feeds are scarce make pumpkins well worth while.

GLEANINGS OF THE STUBBLE FIELD

It is not possible to harvest all the grain crop, even if the stand is perfect and the harvest weather good. If the grain is lodged, the loss is very much greater. If the grain is a little over-ripe, there is considerable loss by shattering, at least enough to seed the ground for another year, if it were evenly distributed. It is probable that the loss from all these sources will amount to from one to three dollars per acre.

In our boyhood we always gleaned the stubble fields with the rake. One summer we were promised the gleanings of the wheat field, if we would take care of them. We did so, tramped it out with horses, and took it to the mill. Great was our disappointment to find it was not marketable wheat and we had to take a low price. The grain had taken up moisture from lying on the ground.

The best gleaner of the stubble field is livestock, and the best of the livestock for gleanings is sheep, and the next best hogs. To use them, however, the land must be fenced into fields, hog-tight and sheep-tight. We are morally certain, however, that the gleanings of the fields will pay sufficient interest on the fence not only to keep it in repair, but to pay for it in seven or eight years. Hence if we are to save our gleanings (one to three dollars an acre—no inconsiderable amount) we must have, first, rotation of crops, and then fields fenced separately, so that whatever livestock is put in will stay there till taken out.

PRODUCE MORE BEEF

By Prof. George B. Caine.

Special efforts must be made by Utah beef producers this year to increase the supply of beef, not only because of the greatly increased demand, but also because the season just past shows such a decrease in the number of our animals. The production of beef is now a most profitable as well as a most patriotic duty. The demand is great because the supply is very low. Never in history have the packers been so anxious to get hold of good fat cattle of any kind as they are today. Proper selection of stock, with wise feeding, must be practised by every beef producer.

Select low set, block, early-maturing beef cattle.

Feed is high priced and the demand is urgent, so proper selection of beef



Get more eggs while the price is up in the air. Hens should be laying well now if fed properly. Try Moregg — for results.

OGDEN PACKING & PROVISION CO.
Ogden, - Utah

cattle is more important than ever before. We cannot afford to own the long-legged, cat-hammed, slow maturing steer during such periods. Animals that are low set, blocky, thickly covered, and with the instinct of early maturity, are the ones that should be selected and fed during the next few years.

Run more females on the range. This can be done by practising better feeding methods with the young animals, thus getting the steers ready for market one year younger. With this method a cow takes the place of a steer on the range.

Feeding roots, silage and hay should be extensively practised with the calves during the first winter. Turn them out to grass at yearlings feeling fine and lively so that when fall comes they will weigh 800 pounds instead of 500 or 600 pounds. Cattle going on to grass thin and lifeless make very little gain for several weeks. By the time the starved animal gets to feeling good, and ready to gain, the feed dries up, hence the above size is not reached until he is about 2½ to 3 years of age.

If you have more preserving jars than you can fill, lend them to a neighbor, who will make them work for the nation.

Don't have an empty preserving jar in your neighborhood next fall.

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VOLUME XIII.

LEHI, UTAH, SATURDAY, JUNE 23, 1917

NO. 47

What Irrigation Has Done For The West

By O. W. Israelson, Utah Agricultural College.

Actual cultivation of land under irrigation projects during the last quarter century has not kept pace with the construction of works. According to the thirteenth census, 15,000,000 acres of land were irrigated in this country in 1909, and in 1910 collection of additional data indicated that the irrigation enterprises were then capable of irrigating 20,000,000 acres and that when completed they would supply water to 32,000,000 acres. Nearly \$308,000,000 had, in 1910, been expended in irrigation works, the ultimate cost of which was estimated at more than \$424,000,000. It was further estimated that the preparation of land for irrigation and cost of preparing all of the lands included in irrigation enterprises to receive water would aggregate \$443,000,000 or nearly \$19,000,000 more than the ultimate cost of irrigation structures. These data show that prior to 1910 irrigation works cost 62 per cent of the total expenditure for irrigation, but that of the ultimate cost the cost of the works will be less than 50 per cent. Irrigation agencies have given considerable attention to design and construction of works, in which engineers and contractors of the best training and experience have been employed; yet very little systematic thought has been given to the farmer's problem—that of preparing the land to receive water, the cost of which as above pointed out is at least half of the total cost of irrigation.

Moreover, as stated by Fortier, land agents and others engaged in the settlement of irrigated lands, have magnified the importance of canal works and ignored the heavy expense which has had to be incurred by the settler before his lands were made productive. Erroneous impressions thus conveyed have contributed to much of the disappointment among settlers of irrigation projects, and the heavy loss to investors in irrigation enterprises.

But, notwithstanding these occasional disappointments to settlers and losses to investors, irrigation development as a whole has been of tremendous value to thousands of people and to the entire country. For example, the total yield of cereals in Utah for the year 1910 is estimated as nearly 8,300,000 bushels, which is valued at \$6,000,000. Seventy-two per cent of the total yield, valued at \$4,100,000, is reported to have been grown on irri-

gated land. Since only \$14,000,000 had been expended in irrigation works up to 1910, the grain crop alone (Continued on Page 10)



We Depend Upon Our Supply of Irrigation Water From Just Such Places as Shown in This Picture.



Showing Some Difficulties of Travel in Our Mountains During the Winter-time. It is Here That the Snow Is Stored From Which We Get Our Irrigation Water.

Use of Water In Irrigation

By L. M. Winsor,
Irrigation Specialist United States Department of Agriculture and Utah Agricultural College.

Moisture is the limiting factor in crop production with respect to most of our Western farms. It is important, therefore, that judgment be used in the matter of supplying moisture to

crops through the artificial means of irrigation. Crops grow best when the soil contains just the right percentage of moisture; therefore, there are two ways that moisture may be considered as the limiting factor. First, when the soil is too wet, air is eliminated and the crop smothers. Second, when the soil is too dry the crop suffers from insufficient nourishment, because plant food may be absorbed only when in solution.

The careful irrigator will study conditions and endeavor to supply moisture when it is needed, avoid over-irrigation, and avoid allowing the soil to become too dry by permitting too long a period to pass between irrigations.

Different crops require different quantities of moisture for maximum production. Alfalfa may use a total of twenty-four to thirty-acre inches in a season's growth, while a maximum crop of tepary beans may be matured with fifteen acre inches, including rainfall. The moisture may be added to alfalfa at any time with respect to each crop's development, but if beans are irrigated at blooming time the bloom will blight and fall and no crop may be expected. The time of application of water, therefore, should be governed by the nature of each crop's requirements and peculiarities. As a guide in this connection the following suggestions may help the inexperienced irrigator.

Water requirements of various staple crops:

Alfalfa

Irrigate in fall and early spring with waste water and flood water, then at other times during the year when water is available. Alfalfa will use more water than most of the staple crops. Avoid over-irrigation. Wet feet will cause death of the crop.

Grains

Small grains may be grown with a very light amount of irrigation, especially where rainfall amounts to more than twelve inches per year. Where irrigation is necessary, water should be applied during the early development of the crop, before it comes into full head. When irrigated in later stages, after the ground has once become dried out, a second growth will result to the detriment of the crop already near the ripening stage.

Potatoes, sugar beets and other root crops require a uniform soil moisture content for best development. (Continued on Page 14)

Do Not Sell Your Stock Hogs----Keep Them For Better Market

A number of times we have reminded our readers about keeping their stock hogs. Word has come to us that some of the farmers in southern Idaho are selling their stock hogs at 12½ to 13 cents a pound. These hogs are being shipped east and farmers there buy them, finish them for market and make a good profit out of them.

June is what they call "an off month" and prices are usually low. After that they commence advancing again, and unless the food control

bill has some effect, they are going to a very high point this summer, so that the farmer who keeps his hogs is going to make a big profit. Should the food control bill have any effect, it is also going to effect the grain prices, so the farmers again will be glad to have the hogs to which they feed the grain, so they can get proper value out of the grain by feeding the hogs, as the government will make a relative value between the two.

For the farmers to make a profit, they must also have the hogs to use

all the waste around his farm. With the scarcity of labor, they are going to be a material assistance to him in helping him to harvest his crop, or even take up the waste grain, whichever the case may be.

Our government is emphasizing the importance of keeping our stock hogs, and it seems that we could do well to follow the lead of our officials.

Again we want to remind you of the sheepmen and their experience along this line. What would it mean to those men if they had not sold out

and owned their herd today?

If this proposition of keeping the stock hogs is a good thing for the farmer, it means increased wealth for the state.

If it is profitable for the eastern farmer to buy these hogs and he has found it to be so by many years of experience, then our farmers can make it profitable. We can produce pork just as cheap as any state in the union. The very fact that eastern buyers are picking up all they

(Continued from Page 3)

DAIRYING

HOW TO USE SKIM MILK

Ways in Which This Nutritious Food Material May Be Used to Advantage in Cookery.

There are many places in which skim milk is not used as completely as it might be. On farms there is often more than can be profitably fed to calves or pigs. In creameries much of it is made into cottage cheese, but even then the whey, which is really rich in good materials, goes to waste.

Many people do not realize how nutritious skim milk is. They imagine that because it so generally has little or no commercial value it is hardly fit for human food. As a food it is not so valuable as whole milk, and cannot take the place of the latter in the diet of children. Nevertheless, skim milk can be used to great advantage in combination with other food materials, especially in cooking, and is altogether too valuable to be wasted.

A quart of whole milk weighs 34½ ounces, or a little more than two pounds, nearly thirty ounces of which is water. The remaining solid material contains very useful food materials. Slightly more than one ounce is protein, a very important muscle builder, and one of the most expensive of the substances needed by the body. About one and a third ounces consists of butterfat, and one and two-thirds ounces of milk sugar. These two materials are used by the body to provide it with energy, much the same as fuel is used to produce steam and power in the engine. The quart of milk also contains about one-quarter of an ounce of mineral matter, small quantities of which are very necessary for the growth and general upkeep of the body.

As the fat is separated to form the

cream, some of the protein, milk sugar and mineral matter go with it, but by no means all. The protein remains; therefore, a quart of separator skimmed milk provides slightly more of this indispensable and costly material than does a quart of whole milk. It contains in all about one and a fifth ounces of protein, one and a fourth ounces of milk sugar, about one-quarter of an ounce of mineral matter and a little fat, the last named depending, of course, upon the completeness of the separation. This means that, quart for quart, it would furnish the body with slightly more protein and milk sugar than whole milk does, and practically the same quantity of mineral matter, though far less fat. In other words, as a tissue builder it is equal to whole milk, and as an energy yielder not nearly so good. Since, as a rule, the tissue-building materials are contained in the more expensive foods (meat, eggs, etc.), and the energy-yielding materials can be largely provided by cheaper foods (bread and other cereal foods, fats, potatoes, etc.), it seems doubly wasteful not to use skim milk.

Those who buy milk seldom have much skim milk to use unless they follow the custom of skimming their own cream. That there is economy in so doing is shown by the following: A quart of whole milk usually sells for the same price as a half pint of cream, which contains about one-fifth ounce of protein, one and a half ounces of fat, not quite one-third ounce of milk sugar and a very little mineral substance. If this is compared with a quart of whole milk, which very commonly can be purchased for the same sum, it will be seen that the purchaser in buying a half pint of cream instead of a quart of milk sacrifices nearly an ounce of protein, one and a third ounces of sugar and one-fifth ounce of mineral matter. He gets, of course, a trifle more fat—about one-fifth ounce, or a level teaspoonful—but this is small in comparison with what is sacrificed. Some people, therefore, buy whole milk instead of cream in order to have for family use the nourishment contained in the milk after it has been skimmed. Home-skimmed milk is, of course, richer in fat than that which has been skimmed by a separator, but it can be used in the same way.

The uses of skim milk are many and in cooking it adds to quality as well as to food value. If used in place of water in bread it adds about as much protein to one pound of bread as there is in an egg. Skim milk used in place of the usual half milk and half water, of course, increases the quantity of protein in a loaf by the amount that is contained in half an egg. The saving involved in the use of skim milk in bread, however, is small compared with that involved in its use in the preparation of cereals, for, while in bread the milk is only about one-third of the flour, in the preparation of cereals the volume of milk is usually three or four times that of the cereal. To cook a cupful of cereal in three cupfuls of skim milk instead of three of water adds as much protein as that contained in three eggs.

There are many dishes which may be described as vegetable milk soups, usually made by combining milk and the juice and pulp of vegetables. This mixture is then thickened with flour and starch and enriched with butter or other fat. If a fire is kept all the time and the cost of fuel need not be taken into consideration, the following method is recommended as a means of utilizing skim milk: Chop the raw vegetable or cut it into small pieces. Put it with the skim milk into a double boiler and cook until the vegetable is tender. The mix-

ture can then be thickened and enriched as described above. By this method no part of the vegetable is thrown away and the liquid of the soup, instead of being part milk and part water, is all milk. A soup so made, therefore, usually has about twice as much protein as that made in the other way, and has the additional advantage of a particularly good combination of mineral substances, for milk is rich in calcium and phosphorus, and the vegetables are rich in iron.

In making these soups, use is made of many of the parts of the vegetable that are ordinarily thrown away, namely, the outer and tougher leaves of lettuce, which has a higher iron content than most other vegetables; the tops of celery, and even the tops of young onions. Small quantities of cooked vegetables left over from other meals may be utilized in these and in other kinds of soup.

If in making these soups the vegetable is chopped finely in the meat grinder, they need not be strained before being served. If the vegetable is not so chopped, the soup may be put through an ordinary strainer, or such vegetables as carrots or potatoes may be cut into slices and left in the liquid, in which case the dish resembles a vegetable chowder. These soups may be thickened with stale bread.

Soup Recipe

- 1 quart of spinach (4 ounces).
- 1 thin slice of onion.
- 2 slices of stale bread (2 ounces).
- 1 quart of skim milk.

Put the spinach and onion through the meat chopper, following them by the bread, in order that there may be no waste. Put into a double boiler with the milk and cook until the spinach is tender.

There is a class of extremely valuable dishes which are sometimes called "cereal milk puddings," usually made by cooking equal volumes of a cereal (usually rice) and sugar in twelve times the volume of milk—for example, one-fourth cupful of rice, one-fourth cupful of sugar, and three cupfuls of milk. When a fire is kept constantly and the cost of fuel need not be considered, such a dish may be made with skim milk and very much more than three cupfuls of the milk used. As the water evaporates, the dish becomes richer and richer in protein.

Oatmeal may be substituted for rice in the above-described pudding and adds somewhat to the protein value, though the quantity of cereal used is so small that this is not important.

Thin cereal-milk puddings, made by slowly cooking down until thick ten or twelve parts of skim milk and one of rice, oatmeal, or similar cereal, may be used in place of cream with stewed fresh fruits or cooked dried fruits or baked apples.

THE COST OF SILAGE AS A SUPPLEMENTARY FEED

By V. E. Scott.

The necessity of succulence in the ration for dairy cows is now recognized in nearly every dairy community, but the majority of dairymen in Nevada are still in doubt regarding the kind of succulence to use. Many would like to use silage, but think it would be too expensive when alfalfa hay is abundant and cheap. In a country where hay is the staple crop, the cost of any feed raised to supplement the hay in feeding should be based on the income of the land from the hay plus the cost of producing and harvesting the supplementary crop. Taking a large number of averages, it is found that alfalfa hay at \$7.50 a ton in the stack, nets a farmer, after paying interest on the investment, cost of producing and harvesting the crop, approximately \$14.50 an acre. This \$14.50 an acre is really a rental which the farmer receives for his land. If the price of alfalfa goes up, his rental increases and vice versa, for the cost of producing the crop remains practically the same.

Assuming that we were planning to

raise corn silage to supplement our alfalfa, we should consider the following items in calculating its cost:

Per acre	
Interest on the investment in land	\$ 8.00
Land rental (money which could be gained with a hay crop) ..	14.50
Interest on investment in silo and equipment	6.50
Plowing, harrowing, irrigating ..	5.50
Cutting the corn and filling the silo	10.50
Total	\$45.00

The yield in corn silage is from 10 to 20 tons to the acre. In some localities the yield would not be over ten tons, but taking fifteen tons as an average, the cost of corn silage would be \$3 a ton. A variation in any one of the above items would make a variation in the cost of the silage. If the price of alfalfa goes up to \$10.50 in the stack, the land rental increases \$12 an acre; this would add 80 cents a ton to the cost of corn silage raised on the same or similar land.

In many places it is not feasible to grow corn for silage on account of early frosts. Wheat and other cereals are being used quite extensively in many of these places. If wheat silage were to be used, the cost per ton would be somewhat greater on account of the smaller yield. Under our conditions we could expect about ten tons of wheat silage to the acre. The cost of cutting and ensiling this would be about one-third less than cutting and ensiling corn silage, but the other costs, such as interest, land rental, plowing, etc., would be about the same. This would make wheat silage cost about \$4.25 per ton. At this figure, wheat silage brings in a gross income of \$42.50 per acre. If the wheat were harvested and threshed, it would yield a gross income of from \$30 to \$50 an acre. The question of raising wheat as a cash crop or as silage should be settled according to the needs of the livestock, rather than according to the price of wheat, for at \$4.25 a ton wheat silage brings in approximately as much or more than the grain would sell for.

HIGH COST OF POOR ROADS

How much is our "mud" tax? This will give you an idea of it. Governor Capper of Kansas recently watched an actual test made to determine the difference in the cost of hauling grain on good and bad roads. On a hard road there had been delivered eleven tons of grain in one trip by one team, using five wagons. On the mud roads two tons was all that could be delivered by a single team. The haul was four miles in each case. The teams could make three trips a day or 24 miles, team travel. On the mud road the team delivered six tons a day at a cost of \$4.50 per team and wagon, or 75 cents a ton for the haul. On the hard road 33 tons were delivered during the day. The cost was \$4.50 for the team and wagon, or a cost of 19.7 cents a ton for the four-mile haul. The difference in this case was 55 cents a ton in favor of good roads. There were 450 tons to be delivered in this particular instance and the saving effected by the hard roads figured on the basis of the time required was \$264.

Everybody can! Put your spare time into cans and jars.

The sooner into the can, the fresher the taste next winter.

Can for home use in glass containers, as tin cans may be scarce.

Pickle or brine suitable vegetables in crocks.

The scarcer fresh vegetables are the more valuable are the canned ones.

See that jars, cans and processing outfits are ready to do business as soon as fruits and vegetables ripen.

**If you want money,
drop us a line.**

We loan on first mortgages on Utah farms or Salt Lake City real estate at reasonable rates.

Prompt action and fair treatment if you do business with us.

**Palmer Bond &
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WALKER BANK BUILDING
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Dry-Farming Possibilities In Box Elder County

By J. W. Paxman.
(Continued From Previous Issue.)

Curlew

Curlew valley is an extensive flat from Kelton to Snowville and continuing far into Idaho. The vast tract in Utah is about 20 by 44 miles—more than 500,000 acres. The northern portion of which, estimated at 275,000 acres, is covered with sage brush, while the remaining 225,000 acres at the south is covered with shadscale and greasewood.

Most of the land is underlaid with a hard, chalky substance from 8 to 24 inches beneath the surface, and thought by many to be an unpregnable hardpan. Such is not the case, however, for when exposed to the weather it yields and pulverizes. Under cultivation it takes the water quite readily and is an excellent retainer of moisture. It improves in crop yielding power under methods of cultivation which conserve the moisture, bringing better and better crops each year, and finally dissolves into a very fine clay soil.

President J. C. Cutler of Snowville, a practical and far-seeing man and a man of wide experience in the Curlew valley and with good judgment, is authority for the statement that 375,000 acres in this section are capable of producing profitable crops of wheat, and that 375,000 acres will produce good crops of rye, and that such crops have never suffered from drouth. He also stated that no lands in Curlew valley were so poor that they would not grow rye.

This great territory is destined to produce its millions for the milling industry, besides sustaining thousands of cattle and sheep on the fields of rye. It was surprising to the writer when he was told that in round figures a half million bushels of grain was shipped out of this valley in 1915. The country is so large that the land cultivated, 25,000 acres, or one-twentieth of the total area, seemed too insignificant to produce any such amount. But then when you see only one acre cultivated out of every twenty, it does look a small amount. Most of these lands may not be capable to produce big crops, but being practically level and easily and cheaply operated, yields of 10 to 15 bushels will undoubtedly pay for their use into crops. Rye will not pay as a commercial grain crop. The best values are obtained from rye fields by utilizing them for pasturing (grazing) or forage (hay). The shadscale or poorer lands can be utilized in this way by farmers owning cattle and sheep and fattening them on the green rye. Rye provides an excellent early pasture and will give early beef and mutton and carry over the remnants and younger animals to another year. Not only the 125,000 acres of poorer lands in Curlew valley, but the amount can be doubled and trebled in other parts of Box Elder county, which can be used, and some day will be used, in a farming scheme to produce beef, mutton and pork, from rye fields on the dry farms. The proper place for rye is the poorer lands, and the proper use of it is grazing and forage.

The climate in this section is not detrimental to crops, the production of which will be limited by the rainfall. No accurate records have been kept excepting at Snowville, which show an annual precipitation of little more than 13 inches. It is evidently less and less as we go south. Most of the land is occupied or owned. The one drawback here as in the other districts mentioned is scarcity of water. It is obtained only by driving wells from 100 to 300 feet.

Park Valley

The Park valley comprises about 96,000 acres and fully nine-tenths of it owned and not more than one-tenth under cultivation. The results

to date with few exceptions have been very meager. The crops have been wheat, rye, barley, corn and few potatoes. The valley is surrounded by mountains on the north, west and south, open only on the east, looking into the Curlew valley. The lands skirting these mountains are loamy and fertile, especially on the north and west, where the best success can be made in dry farming. Towards the center of the valley there is evidence of alkali and to the south and east the lands are poorer in quality.

Most of the valley lands are said to be underlaid with a coarse gravel from 4 to 8 feet, which make these lands practically unfit for dry farming since they provide little reservoir capacity for the storage of moisture.

Surface water in inexhaustible quantities are said to exist from 8 to 30 feet, making it possible to pump water for irrigation.

Unlike the districts heretofore mentioned, this section seems to have plenty of water easily accessible for culinary purposes, being obtained from wells 10 to 40 feet.

The Raft River valley joins the Park valley on the northeast and is principally in Idaho, but about 75,000 acres are in Utah. These 75,000 acres are principally owned and are in process of being settled. The lands can be said to be fair in quality and capable of giving good crops. Very little the shadscale is noticeable and a plentitude of sage. Some gravelly sections and cedars abound on large areas. The only record of rainfall is at Park Valley City, which reports less than 11 inches, but it is quite certain this is not complete and recent evidence would indicate the rainfall to be above 13 inches, or about equal to that of Snowville. We look for much development here and at Park valley in the next few years.

Grouse Creek

This district is in the extreme western part of the county and over the mountains from Park valley, comprising a territory eight miles east and west and twenty miles north and south with an area of 100,400 acres. It is principally mountainous and rolling in character with a stream of water running through the center of the valley. The altitude is over 5,000 feet, and the growing season would likely be shortened on that account.

The lands are said to be good and the rainfall ample on the higher levels.

A supplemental report may be made giving more detailed information after making a proposed visit in the near future.

Conclusion

From the foregoing report or survey of conditions we obtain some idea of the magnitude of the agricultural possibilities in this county, particularly as it pertains to dry farming. San Juan county with its reported 750,000 acres of tillable lands, measures but one-half or less of the cultivable area of this county, and when the lands in this county are fully developed they will be capable of producing as much agricultural wealth as the southern half of the state is doing at present.

The vast dry farm areas, large enough to make a veritable empire, are capable if properly managed to produce bread and meat for a population double that of Utah at the present time. This is a stupendous possibility and is worth the earnest consideration of those who have the development of the county at heart.

To bring these lands to their full producing power it is necessary to adopt and practice the best known methods for the utilization of the rather limited rainfall. Nature has left no margin for waste in this par-

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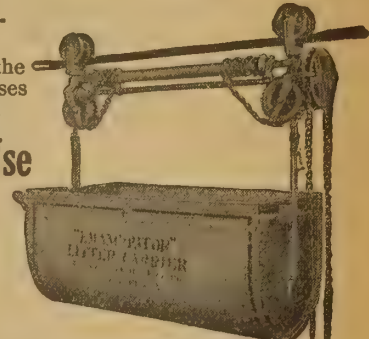
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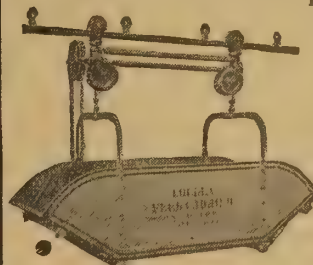
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ticular, as the annual precipitation is no more than needed when properly conserved, although a safe supply to produce profitable crops. The soils are safe and will do good duty, but it remains for the farmer to closely follow the best dry farm methods and rest or clean fallow his land each alternate year to make it safe and most profitable. Such methods have not been largely practised in the past, and this, together with poor equipment, has been responsible, more than other things, for the poor results in the past. A good vigorous campaign on methods would do much to correct this condition and put the farmers on the way to success.

The water facilities are a handy cap to the settler and entail a large expense at the commencement of his development work, and to meet this and otherwise equip his homestead and farm, he should have \$1,000 or more to begin with, or available during the first 18 months.

A haul of 6 to 20 miles is necessary to get crops of grain to railroad, which adds considerable to the item of marketing. In some instances the crops are endangered by June frosts, but this can be controlled by pasturing the grain in the spring.

Every item in economy and facility of Nature should be taken advantage of, and the poorer lands and uncultivable areas ultimately utilized in forage crops and pasturing as well as the roughage on the farm for livestock.

Many thousands of livestock will eventually find support from the nutritious grasses and rye pastures on the dry farms and provide sources of great wealth to the county and bring happiness and contentment to the "owners of the land."

Box Elder is destined to become the wealthiest dry farm county in the state. The land is abundant and endowed by Nature's gifts—not lavishly, but enough—and by a proper coupling with human energy, intelligently directed, it is bound to succeed.

BENJAMIN FRANKLIN PHILOSOPHY

"Forewarned is forearmed."

"Without justice courage is weak."

"The used key is always bright."

"Necessity never made a good bargain."

"Well done is better than well said."

"None preaches better than the ant, and he says nothing."

"Would you persuade, speak of interest, not of reason."

"If you would have a thing done, go; if not, send."



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Now is the time to buy your supply of bottles
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Are you putting away a few dozen eggs for
next winter's use? If done by the water glass
method it costs only a small amount per dozen.
Eggs are cheaper now than they will be next
December.

Prepare now to can and dry all the surplus
fruits and vegetables. This means every fam-
ily. We can only help feed the world by a
united effort. Canning and drying are ways to
help.

TRY NEW CROPS

The farmer is naturally very conservative and
he is prone to shun anything new; usually he
does not like to experiment. Without doubt he
should be careful and should give most of his at-
tention to crops that are known to be good, but
we believe he will do well to watch for possible
new crops. Often the most paying crops have
been introduced by mere chance and usually
these new crops are taken up very slowly by
the farmer. We do not wish to urge undue haste,
but we like to see the farmer alert to possible
new ways of increasing his income.

WASTE NOT—WANT NOT

Because of our unusual good prospects for a
big crop, we wonder if some of our people real-
ize how near the world faces a famine. Thou-
sands in the war-stricken countries of Europe are
slowly starving. The high price of food has
made many of our poorer people in the large
cities feel the pinch of hunger.

The waste that occurs in America would feed
millions every year. How many are going to
heed the call of our national authorities and stop
this waste? If this great waste could be stopped,
it would stop the want that is now in Europe.

We can do more to help feed the armies and
people of our allies by stopping the waste than

we can by increased production. Waste not—
want not, and besides, do a patriotic duty.

OUR ENEMIES AT HOME

Very few farmers but what have enemies, and
all the more reason why we should all fight
them. A plant that is out of place, one that is
taking from the growing crops either soil food
or moisture, is an enemy that should be fought
until it is conquered. Every weed is an enemy,
and if allowed to grow will steadily get a hold
that makes it difficult to kill. The longer you
leave them undisturbed, the greater their capac-
ity for harm and the harder it is to destroy
them. Cultivation is the way to fight them, and
at the same time help the growing crops. Greater
production will come if you have no weeds. The
warfare against weeds must continue all the
time. They seem to have no season, but grow
all the time. Fight these enemies on your farm
and help us to win the fight abroad.

RIGHT KIND OF IRRIGATION IMPORTANT

When everyone is striving to produce a maxi-
mum crop, anything that will help or hinder
that production should be carefully studied. We
were the pioneer irrigators and have been fol-
lowing the practice for years, yet many have
much to learn about irrigation.

A growing crop is often hurt by too much
irrigation. The same might be said about too
little irrigation.

Every farm is a study of itself. General rules
may be given, but they must be adapted to the
soil and many other conditions on each farm.

Irrigation should be applied according to the
needs of the crop and growing plants. Much can
be learned from our neighbors, profiting by their
experiences. The irrigation season is now on
and one will do well to make a careful study
so he can get the very best results, and in this
way produce a maximum crop.

PROFIT BY THE OTHER FELLOW

It has been suggested a number of times dur-
ing this increased food production work not to
do any experimenting this year. This may be
all right under unusual conditions. This is no
reason, even this year, however, why you should
not profit by the successful work of your neigh-
bor farmer. Profit by the work he is doing and
make your farm more successful and profitable.
Visit his farm and, if possible, one of the ex-
perimental farms conducted by the state. Do
not go to criticize, but go to learn. Profit by
their mistakes, for they all have them. Many
farmers learn by the mistakes they make. You
must be shrewd enough to adopt the best they
have to your farm. Learn something all the time
and in this way you can profit by the other
fellow—his mistakes or his successes.

PLAN NOW TO BUILD A SILO

Livestock is, and always should be, one of the
most important parts of farming in Utah. Feed,
then, will be a problem to solve if the high prices
of last winter were ever to be repeated. The
silo is one way to help.

Some have already planted their corn or peas
and oats and other silage crops and plan to
build their silo during the summer. Thousands
of acres of corn have been planted this year and
can be purchased for filling the silo if the man
who wants the feed will get out and contract
to buy it.

The silo can be built later on. Some have al-
ready expressed a desire to build a silo this
year and, if they cannot fill it this fall, it will
be ready for next year.

If your other farm work will permit, plan
right now to build a silo.

DAIRY COW EFFICIENCY

Just a word about dairy cow efficiency. There
never will be a time, perhaps, when dairy prod-
ucts will be in greater demand than in the im-
mediate future, and the indications are that feed
and labor will be scarce and high priced. There

will be no place in the realm of dairyland for
the cow that cannot make good, or for the dairy-
man who does not know how to get the most
from his business. There will never be a time
when the business ability of the dairyman and
the production ability of the cow will count for
more. These conditions will make the profitable
cow more profitable than ever before, and the
unprofitable cow will show greater losses. Every
dairyman should realize more than ever before
that greater efficiency is required under pres-
ent conditions.

DRAFT THE LOAFERS

Any man who is idle these days will have a
hard time to give a reasonable excuse. There is
work for every one, and then much that should
be done is neglected on account of insufficient
help. There are only a few loafers, but those
who will not work should be drafted and put to
work or sent to the front. This is no time
for the idler. He should not be allowed to live
from those who labor.

One of the eastern states has passed a law,
and they are enforcing it, against the habitual
loafer. Every one should be willing to do some-
thing for himself and his community, but if we
have people who are such parasites on the com-
munity who are slackers, then something should
be done to put them to work. The great cry
from everywhere is help, and the solving of the
problem is far from being done.

UTAH CAN CLAIM THE HONOR ROLL

Our state is in the lead for volunteers, both
for army and navy. We did ourselves proud
when Utah answered the President's call for
Red Cross funds.

Now we claim the lead in the conditions of
our crop prospects. Taking 100 as the average
of crop conditions for the past ten years, our
conditions this year is represented by 107.5.
Nevada follows Utah very closely.

We have an excellent crop prospect this year.
The first cutting of alfalfa reflects this condi-
tion, the best crop for several years in many
localities. Leading as we do in these three great
activities of today, we can rightfully claim the
honor roll.

Utah is doing her bit in the hour of peril. We
have shown our bravery and desire to help fight
for peace and democracy. We have been lib-
eral in supplying our money in the purchasing
of bonds. We have shown our sympathy by the
record we have made in giving to the Red
Cross. We are helping to feed ourselves and
the world by producing more than an average
crop. Every citizen of Utah can be depended
upon to do his "bit."

LIVESTOCK LOSSES FROM DISEASES

The losses run into the millions and much of
it is preventable. Is it the fault of the animals
or can it be the fault of the farmer, the owner?

There is an old saying that prevention is bet-
ter than a cure.

How often do you clean up your place and use
some good disinfectant? When you have a sick
animal and do not know what is the matter, do
you take any precaution to protect the rest of
your stock and your neighbors'? Our state and
national government want to help in this pre-
vention of loss, but so often they are not given
a chance. Our government goes so far as to
provide serum and vaccine under certain con-
ditions, free of all cost, so as to help prevent
these losses.

Our farm animals, whether hogs, chickens,
cows or any other, are becoming so valuable that
we can afford to spend some time in looking
after them.

It is not only an individual affair, but it should
be a co-operative community effort to prevent
the loss of any livestock.

If you have cultivated, then cultivate again.
Cultivation pays and pays in dollars and cents
at harvest time with better and bigger crops.

Wage War On House Fly

The house fly can be controlled if ordinary care is taken to clean up the breeding places and to kill the adult flies. To rid the huose of flies, the best known remedy is the following:

Soak a piece of bread about one and one-half inches square and one-quarter inch thick in a little milk; then place the bread in a saucer and add a teaspoonful of ordinary formalin. Add sufficient water to raise the level of the liquid in the saucer until it almost reaches the upper surface of the bread. Sprinkle over the bread and liquid a spoonful of sugar.

This saucer should be placed on a window sill in the evening and the blinds drawn before all the windows except the one before which the saucer is placed; this shade should be drawn two-thirds of the way down. Early the following morning the houseflies will go to the window that is partially lighted and partake of the liquid in the saucer. Within ten minutes after a fly has taken the least sip of the liquid he will be killed. This method cannot be considered in the least dangerous to the children in the house as a taste is very repulsive to human beings. If taken into the mouth of the child vomiting occurs, but no serious illness.

Poisoned fly papers and poisoned liquids commonly sold upon the market should be avoided, as many cases are reported each year of children being dangerously ill or even losing their lives through gaining access to some of these articles.

If sticky fly papers are used, they should not be placed where clothing, curtains, etc., cannot possibly come in contact with their surfaces. It is far better to pin the fly paper on the outside of the screens and catch the flies as they seek entrance to the house, than to limit one's self to destroying only those that have already gained admission.

Tight screens should be securely fastened to all doors and windows. They should be attached by hinges to allow them to swing outward when cleaning or dusting them. Repair or replace torn screens in the spring.

The garbage can is a breeding place relished by the housefly. Construct this receptacle in such manner that flies cannot gain entrance. If ventilation of the can is wanted secure a wire fly trap to the lid over a hole that admits considerable light. The fly that gets in by chance will then attempt to leave by the opening allowing most light to enter, with the result that it is soon found in the trap. Boiling water poured over the trap every other day serves to kill those imprisoned. Garbage should be burned or buried twice a week. Dish water and scraps of food should not be thrown carelessly out the backdoor, but the former should be strained and all the vegetable matter removed. The habit of throwing dish water out the backdoor is one to be discontinued as unsanitary.

The outhouse or privy is a building which should receive our careful and constant attention. It should be made as light-tight as possible. Houseflies do not like very dark places in which to lay their eggs. The door should be hung so that its natural tendency will be to swing shut. Ventilation holes should be small, high up on the sides of the wall and covered with screen. A couple of shovel-fuls of ashes or earth should be thrown upon the excreta every other day.

The stable manure should be removed from the stable every five days during the summer at least. It is best scattered out upon the soil where it is needed for fertilizer. Manure so treated will quickly dry out and thus will not afford a breeding place for the housefly. The next best plan is to remove it every day to a

manure pit which should be as nearly fly-tight as possible and dark inside.

DO NOT PLANT IMPORTED BEANS

It has come to the knowledge of the United States Department of Agriculture that certain shipments of beans from the Orient, known as Burma and Rangoon beans, have entered this country from Canada.

They closely resemble the ordinary navy bean in appearance, but can be distinguished by their light yellowish color and the fine distinct radiating lines passing out from the hilum or eye.

They are pole beans of the Lima type and not suitable for planting in this country since they are of tropical origin, and will not mature in the bean-growing states. They are not fit for human food, since they yield hydrocyanic acid in amounts which may be dangerous to the health of the people of the United States.

The port and border laboratories of the bureau of chemistry are under instructions to make examination of all shipments of such beans offered for entry, and to effect their detention.

DO NOT SELL YOUR STOCK HOGS

(Continued on Page 7)

can get and find a ready market with the eastern farmer is a good sign for our farmers to do a little figuring and thinking before they sell their stock hogs. They know there will be a profit to them or they would not buy. Why not keep these hogs here and finish them ready for market?

If it is a question of money that is needed to help tide over the season, it can be supplied, for most of our bankers have promised to help in just such cases as these.

You can make more money by keeping your stock hogs and marketing them when they are ready for the packer. It is a mistake to sell them now at such prices that are being offered.

PASTURES REDUCE AMOUNT OF GRAIN FED TO PIGS

Pasturing hogs reduces the amount of grain needed to bring them to a profitable weight and marketable condition. Either permanent pasture or temporary crops afford such a grain reduction. The amount to reduce the grain ration is a problem for the individual farmer.

Pasturage, however, does not furnish a complete food because a sufficient quantity of roughage cannot be consumed and digested to supply all the nutrients required for rapid growth. The forage, especially from leguminous pastures, furnishes a cheap source of protein, supplies ash for bone making, adds bulk to the ration, and acts as a mild laxative and tonic and keeps the hog's system in condition to utilize profitably the concentrated feeds. Pasture crops alone, however, make a pig's fat thin and soft and grain is required to remedy these defects. Even with the present high prices of grain it pays better not to cut the grain ration more than half, feeding at the rate of two pounds daily per 100 pounds live weight to pigs on pasture, instead of the usual four to five pounds when they are in a dry lot. That this cut will pay better than a greater cut is fully established by records of the rate and cost of grains made by thousands of pigs under such treatment.

The concentrated feeds to use should be carefully considered. By-product feeds and feeds unsuited for human consumption are preferable. Many feeds formerly considered too high priced are comparatively cheap now. On alfalfa pasture the grain should be largely carbonaceous in character. With non-leguminous pastures more protein supplement will be required.

Pigs, grain-fed on pasture, will gain a pound or more a day from weaning to a weight of 200 to 250 pounds, while those getting little or no grain will gain but one-half to three-fourths pound per day. This will bring spring

TRAILERS



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pigs to a marketable weight in early fall, at the period of high prices, whereas those being pastured only are not ready for market until a month or two later. A grain ration, by bringing the hogs to an earlier market, reduces the time of feeding, the risk and the interest on the investment. The animals are in higher condition with a finer and more palatable meat and fat.

Farmers substituting pastures entirely for grain and other concentrated

feeds to their market hogs through the summer will find that before marketing in the fall it will be advisable to feed grain to harden the soft fat and meat and put on additional weight. Light but steady grain feeding on pasture, however, gives better results than a heavier feeding during a shorter finishing period.

Jars worth as much as ever in winter—vegetables worth more than ever. Home canning pays.

HOME

TO PRESERVE VEGETABLES BY FERMENTATION

The fermentation method widely used abroad in preserving string beans, beets, cabbage, cucumbers and other succulent garden crops, is described in a notice just issued by the United States Department of Agriculture.

Sauer kraut and pickles put up in this way are fairly well known in this country, but comparatively few persons have thought of trying it as a household measure for preserving these and other vegetables. Those who like acid foods and who have too few canning containers to hold their surplus products may find this method useful.

The vegetables are not cooked, but are put down in a salt brine in any non-metal water-tight container and are sealed up with paraffin and are otherwise made air-tight. Under this treatment lactic acid will develop and this acid, the value of which as food has been recognized, acts as a preservative. Whether Americans will develop a taste for such fermented foods highly prized in Europe, is open to question, but the investigator believes that many will find the process well worth trying.

To Preserve Cucumbers

Wash the fruit if necessary and pack into a clean, water-tight barrel, keg or crock. On the bottom of the barrel place a layer of dill weed and a handful of mixed spice. Add another layer of dill and another handful of spice when the barrel is half full and when almost full add a third layer. If a keg or crock is used, the amount of dill and spice can be reduced in proportion to the size of the receptacle. When the container has been filled within a few inches of the top, add a layer of covering material—beet tops or grape leaves—about an inch thick. If any spoilage should occur on the surface, this layer will protect the vegetables beneath. Press down with a clean board weighted with bricks or stone. Do not use limestone or sandstone.

Make a brine by adding one pound of salt to ten quarts of water. To each ten quarts of brine so made add two-thirds of a quart of vinegar. The vinegar is used primarily to keep down the growth of injurious bacteria until the lactic acid ferment starts, but it also adds to the flavor. Add sufficient brine to cover the material and allow to stand twenty-four hours. Then make air-tight, as described below. The time necessary for complete fermentation to occur depends upon the temperature. In a warm place only five days to a week may be necessary; in a cool cellar three to four weeks.

Beets and String Beans

The strings should be removed from string beans before they are put up. Beets, of course, require careful washing to remove all dirt before brining. If it is desired, when finally the beets or string beans are to be eaten, to wash out the brine and serve them as fresh vegetables, the addition of spice when they are put up is not necessary. Proceed as with cucumbers.

Make the Containers Air-tight

There always will be more or less bubbling and foaming of the brine during the first stages of fermentation. After this ceases a thin film will appear, which will spread rapidly over the whole surface and develop quickly into a heavy, folded membrane. This scum is a growth of yeast-like organisms which feed upon the acid formed by fermentation. If allowed to grow undisturbed it will eventually destroy all the acid and the fermented material will spoil. To prevent this scum from forming it is necessary to exclude the air from the surface of the brine. This should be done by either of two methods, twenty-four hours after the vegetables

have been packed.

Perhaps the best method is to cover the surface—over the board and around the weight—with very hot, melted paraffin. If the paraffin is sufficiently hot to make the brine boil when poured upon it, the paraffin will form a smooth, even layer before hardening. Upon solidifying, it effects an air-tight seal. Oils, such as cotton seed oil or the tasteless liquid petroleum, may also be used for this purpose. As a measure of safety with crocks, it is advisable to cover the top with a cloth soaked in melted paraffin. Put the cover in place before the paraffin hardens.

The second method, which may be used with barrels or kegs, is to pack the container as full as possible and then replace the head. In using this method for fermentation of beets, cucumbers or string beans, add the board and weights as described above and allow to stand for twenty-four hours before heading. During this period most of the gas first formed escapes and the container then may be headed up tight, first removing the board and weights. Then bore an inch hole in the head and fill the barrel with brine, allowing no air space. Allow bubbles to escape. Add more brine if possible, and plug the vent tight. If the barrel does not leak, fermented products put up in this manner will keep indefinitely.

After sealing with paraffin the containers should be set where they will not be disturbed until the contents are to be used. Any attempt to remove them from one place to another may break the paraffin seal and necessitate resealing. If the containers are not opened until cold winter weather, the vegetables should keep without spoilage until they are used up. If opened in warm weather they are likely to spoil quite rapidly unless the paraffin is reheated and the container resealed immediately. In the case of cucumbers and chayotes, it is preferable, if enough material is available, to use the method of packing in kegs or barrels as described above.

Only those vegetables which cannot be kept by storing or early ones that are not available later in the season, should be preserved. Late beets, for example, can be better kept in the cellar.

The method of putting up cabbage by fermentation has a number of advantages over the present process of making sauer kraut and will be described in a later article.

CORN AND CHEESE, A SUBSTITUTE FOR MACARONI AND CHEESE

Corn may be used with cheese in place of macaroni for the preparation of a delicious and nutritive combination dish.

Here are some recipes:

1 cup of samp (coarsely ground or cracked corn).

1 quart of water.

1 1/4 teaspoons salt.

Boil the samp in the salted water until tender. Drain and combine with the following sauce:

1 cup skim milk.

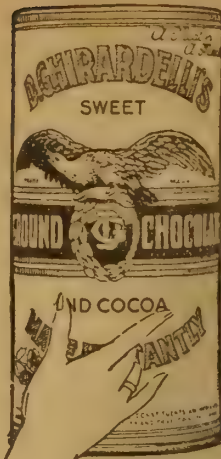
1 cup finely cut cheese.

2 tablespoons flour.

1 teaspoon salt, 1/4 teaspoon mustard, paprika or other seasoning.

Mix the seasonings with the dry flour. Add enough milk to form into a smooth paste. Add the remainder of the milk and heat in a stewpan, stirring constantly until thick. Add the cheese and stir until it is thoroughly melted.

Put a layer of the boiled samp in a baking dish or casserole. Add a layer of sauce and so on alternately until the material is all used. Sprinkle bread crumbs over the top layer of



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Chocolate is an appealing food—perhaps the most delicious of all foods. It is likewise nutritious food—perhaps the most nutritious.

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sauce and cook in a medium oven until the crumbs brown.

Lye hominy or hulled corn (to give it both its southern and its northern name, may be used in place of coarse cracked corn in the preparation of this dish. If this product is used, it is necessary to heat it until it is placed in the oven. A richer sauce may be made, if desired, as follows:

2 teaspoons butter.

2 tablespoons flour.

1 cup milk.

1 cup finely cut cheese.

1 teaspoon salt.

1/4 teaspoon mustard, pepper or paprika.

Melt the butter in a saucepan. Mix into it the flour and seasonings. Add the milk and heat, stirring constantly until the sauce becomes thick and smooth. Add the cheese and stir until it is melted.

TO CAN FOOD WITH ORDINARY HOME UTENSILS

Can Surplus Food but Use Jars and Cans Wisely

Don't have an empty preserving jar in your home next fall.

There may be some difficulty in securing cans and preserving jars.

Reserve regular tight-sealing containers for vegetables, concentrated soups, meats and fish.

Concentrate products so that each jar or can will hold as much food and as little water as possible.

Put up jams, jellies and preserves in glasses sealed with cork or paper and paraffin. Pack fruit juices in ordinary bottles.

Don't can anything that can be kept just as well dried or in other forms. Dry navy and mature Lima beans for winter use.

Produce in your garden lots of cabbage, potatoes and root crops

that can be kept for the winter without canning.—United States Department of Agriculture.

Don't let valuable surplus fruits and vegetables go to waste. Adults and children in a very few hours, with little other home equipment than a wash boiler and cans and jars, can preserve much valuable perishable food for next winter's use. Succulent vegetables and fruits are important to health the year round. See that your table is supplied.

The simple one-period cold-pack method described is that taught by the United States Department of Agriculture for the boys and girls of the canning clubs. With this method thousands of boys and girls each season put up vast quantities of fruits and vegetables. With this method practically every vegetable and fruit grown in this section can be canned.

The wash boiler method described below is entirely effective. Those who desire may purchase home-size water-seal, steam pressure or pressure cooker canning outfits which save time and fuel.

Preliminary Preparation for Canning
Provide a false bottom of wooden lattice work, cross pieces of wood, or coarse wire netting for your clean wash boiler or other large, deep vessel to be used for sterilizing.

Fill the vessel with clean water so that the boiling water will cover the tops of the jars or cans. Begin heating the water so that it will be boiling violently by the time the containers are packed.

See that all cans or jars are in good condition and absolutely clean. Scald them thoroughly. Use new rubber rings and scald them just before putting them on the jars.

Preparing Fruits and Vegetables
Start with clean hands, clean utensils, and clean, sound, fresh products.

Throw out all vegetables and fruits which are withered or unsound. Wash out all grit and dirt. If possible, use only fruits and vegetables picked the same day and never can peas and corn picked more than five hours.

Prepare fruits and large-sized vegetables for blanching. Remove all spots from apples.

Prepare beans and greens as for cooking. Be especially careful to remove all foreign plants from the greens.

Blanch vegetables and all fruits except berries by leaving them from three to five minutes in clean boiling water.

Remove the blanched products from the boiling water and plunge them quickly into cold water, the colder the better. Take them out immediately and let them drain. Don't let them soak in the cold water.

From this point on, speed is highly important. The blanched vegetables and fruits, which are slightly warm, must not be allowed to remain out of the jars a moment longer than is necessary.

Remove skins when required, and

as each article is pared, cut it up into proper size and pack directly into the clean, scalded cans or jars.

Pack as solid as possible, being careful not to bruise or mash soft products.

In the case of fruit, fill the containers at once with boiling hot syrup.

In the case of vegetables, fill the containers with boiling hot water to which a little salt has been added.

Place scalded rubber rings on the glass jars and screw down the tops.

Seal tin cans completely. Watch them for leaks. As the preliminary treatment has taken care of expansion it is not necessary to exhaust the cans.

How to Sterilize or Process

Put the jars or cans as soon as possible into boiling water in a wash boiler or into your canning device. Let them process for the time specified in the table, counting from the time the water begins to boil again, or the gauge on the canning outfit registers the proper pressure.

Time Table

For scalding, blanching and sterilizing of fruits and vegetables by one-period cold-pack method:

		Hot water bath	Water seal	Steam pressure	Pressure cooker
	Blanch or Scald	outfits 212 degrees Minutes	outfits 213 degrees Minutes	5 to 10 pounds Minutes	10 to 15 pounds Minutes
Fruits of All Kinds—					
Apricots	1 to 2	16	12	10	5
Blackberries	No	16	12	10	5
Blueberries	No	16	12	10	5
Cherries (sweet)	No	16	12	10	5
Dewberries	No	16	12	10	5
Grapes	No	16	12	10	5
Peaches	1 to 2	16	12	10	5
Plums	No	16	12	10	5
Raspberries	No	16	12	10	5
Strawberries	No	16	12	10	5
Citrus fruits	No	12	8	6	4
Cherries (sour)	No	16	12	10	5
Cranberries	No	16	12	10	5
Currants	No	16	12	10	5
Gooseberries	No	16	12	10	5
Rhubarb (blanch before paring)	1 to 2	16	12	10	5
Apples	1½	20	12	8	6
Pears	1½	20	12	8	6
Figs	15	40	30	25	20
Pineapple	10	30	25	25	18
Quince	6	40	30	25	20
Special Vegetables and Combinations—					
Tomatoes	1 to 3	22	18	15	10
Tomatoes and corn.....	T. 2, C. 10	90	75	60	45
Eggplant	3	60	45	45	30
Corn on cob or cut off....	5	180	90	60	45
Pumpkin	5	90	50	40	35
Squash	5	90	50	40	35
Hominy	5	120	90	60	40
Cabbage or sauer kraut..	5	90	75	60	35
Greens or Pot Herbs—					
Asparagus	5	120	90	50	35
Brussels sprouts	5	120	90	50	35
Cauliflower	5	120	90	50	35
Pepper cress	15	120	90	50	35
Lamb's quarters	15	120	90	50	35
Sour dock	15	120	90	50	35
Smartweed sprouts.....	15	120	90	50	35
Purslane or "pusley".....	15	120	90	50	35
Pokeweed	15	120	90	50	35
Dandelion	15	120	90	50	35
Marsh marigold	15	120	90	50	35
Wild mustard	15	120	90	50	35
Milkweed (tender sprouts and young leaves).....	15	120	90	50	35
Pod Vegetables—					
Beans (Lima or string)..	5	120	90	60	40
Okra	5	120	90	60	40
Peas	5	120	90	60	40
Roots and Tubers—					
Beets	6	90	75	60	35
Carrots	6	90	75	60	35
Sweet potatoes	6	90	75	60	35
Other Roots and Tubers as Parsnips or turnips—					
Soups, all kinds.....		90	75	60	35
Shell fish	3	180	120	90	60
Poultry and game.....	20	210	180	150	60
Fish	5	180	180	150	90
Pork and beef.....	30	240	240	210	90

Time schedule given is based upon the one quart pack and upon fresh picked products.

When processing fruits in steam pressure canners, not over five pounds of steam pressure should be used.

When processing vegetables and meats, do not use over fifteen pounds pressure.

After processing, remove the con-

tainers.

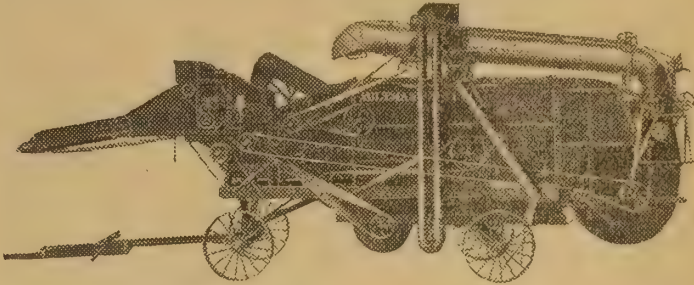
Tighten the tops of jars immediately and stand the containers upside down in a cool place, being careful that no draft strikes the hot jars. Watch for leakage and screw covers down tighter when necessary. Store in a cool, dry place, not exposed to freezing temperature.

Use band labels for cans, being

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careful not to let the glue get on the can itself as it may cause rust.

From time to time, especially in very hot weather, examine jars and cans, making certain that there are no leaks, swellings or other signs of fermentation.

There will be no spoilage if the directions are followed implicitly and the containers are sealed up tight.

Fruits which are put up with heavy syrups can be kept under cork and paraffin seal. Save all wide-necked bottles, glasses and jars for putting up fruits.

Vegetables, meats and fish, however, cannot be kept safely unless they are hermetically sealed. Reserve regular jars for products that cannot be packed in other ways.

As there may be some difficulty in securing cans and jars, dry or keep in other ways everything that need not be canned.

ONE-HALF CUP OF MILK

"Many a Mickle Makes a Muckle."

Half a cup of milk—whole, skimmed or sour—a seemingly trifling matter—hardly worth the trouble to keep or use.

In many households, quite a little milk is wasted—left uncovered in glasses—regarded as useless because the cream has been skimmed off—allowed to sour—poured down the sink or thrown out.

Now if every home—there are 20,000,000 of them—should waste on the average one-half cup daily, it would mean a waste of 2,500,000 quarts daily—912,500,000 quarts a year—the total product of more than 400,000 cows.

It takes a lot of grass and grain to make that much milk and an army of people to produce and deliver it.

But, every household doesn't waste a half cup of milk a day. Well, say that one-half cup is wasted in only one out of 100 homes. Still intoler-

able—when milk is so nutritious—when skim milk can be used in making nutritious soups and cereal dishes—when sour milk can be used in bread-making or for cottage cheese.

USING THE LEFTOVERS

Nothing should be wasted. Some ways to use the leftovers:

Chocolate Bread Pudding

Use 2 cupfuls bread crumbs, 4 cupfuls scalded milk, 2-3 cupful sugar, 2 eggs, 2 squares of chocolate, ¼ teaspoonful of salt, 1 teaspoonful of vanilla. Soak the crumbs in the milk for half an hour. Mix the chocolate in a saucepan placed over hot water. Add to the chocolate half of the sugar and enough milk taken from the bread and milk to make of a consistency to pour. Add to the bread and milk the chocolate, the remaining sugar, salt, vanilla and the eggs, slightly beaten. Turn into a buttered pudding dish. Stand the dish in a pan containing hot water and cook for 1 hour in a moderate oven, or until firm. Serve with any preferred sauce.

Cereal Cups

Pour the oatmeal, rice, or any breakfast cereal left over into cups to mold. For the dessert that evening hollow out the centers of the cereal molds and fill with preserves, jelly, stewed fruit, fresh fruit, raisins, figs or dates and nuts or whipped cream, and pour a sweet sauce or plain cream over all.

Soup

The bones of a roast turkey or chicken can be made into an excellent soup. Boil them in plenty of water till the meat falls off. Then pick out the bones, season the liquor with salt and pepper and chopped celery. Thicken with a little flour and water and let simmer till it is well done.

Potato Balls

Season cold mashed potatoes with pepper, salt and nutmeg. Beat until

(Continued on Page 16)

WHAT IRRIGATION HAS DONE FOR THE WEST

(Continued from Page 3)

for one year was worth 29 per cent of the cost of works. Likewise, of the 978,000 tons of forage crops produced, 892,000 tons, valued at \$6,500, or 46 per cent of the cost of the works, were grown on irrigated land. Hence the grain and forage crops for one year are valued at three-fourths of the entire cost of irrigation works. It must, of course, be remembered that the total cost of irrigation as above pointed out, is more than double the cost of irrigation structures, but, notwithstanding this fact, the returns from irrigation in Utah, as a whole, are indeed very gratifying.

Considering the United States as a whole, the value of the crops harvested from irrigated lands in 1910 is estimated at nearly \$277,000,000, or 55 per cent of the amount expended in irrigation works and in preparation of land for irrigation up to that time. On the basis of the same yields over the 32,000,000 acres included in irrigation enterprises one year's crop will be worth \$590,000,000, or nearly 70 per cent of the estimated total cost of irrigation, including construction of works plus preparation of land. F. H. Newell, professor of civil engineering, University of Illinois, and formerly director of the United States reclamation service, has forcefully pointed out the value of irrigation to the public in the following language:

"Irrigation is of prime importance to the community, state and nation by enabling a complete agricultural development of the arid lands and by insuring immunity from loss by drought on other lands, thus making possible intensive cultivation and a maximum

annual crop production.

"The material benefits to the community are not measured by the crop production alone, but by the stimulation of other industries, such as stock-raising, mining, manufacturing and transportation.

"A still greater benefit to the nation, rising far above material wealth, is that coming from the increase of an intelligent and prosperous rural population, who are not merely producers of food for other people, but who, living in the open, contribute most largely to the best elements of citizenship."

The present stagnation in irrigation development is by most authorities contributed "to lack of proper recognition by engineers and investors of the fundamental economic conditions governing the profits of the individual irrigator." Future development under present laws is dependent upon demonstration, by careful study of each project, that every irrigator can support himself and family and also pay a proportionate cost of the irrigation system. If, however, it should be shown that he cannot do this, the importance of the project to the public may still justify its assuming liabilities which will assure success to the irrigators. Of the many countries which encourage irrigation in this way, Italy grants annual subsidies of 3 per cent of the cost of irrigation works for the first ten years, 2 per cent during the following ten years and 1 per cent for the third ten-year period. Moreover, Italy is now considering the advisability of increasing these grants to sixty years and to lend money to the farmer for preparation of his land at 2 per cent for a period of fifty years.

Problems in Irrigation Development.

That many complex problems have arisen during the rapid irrigation development of the West is not surprising. These problems may be classed as (1) engineering, (2) economic and legal and (3) agricultural.

The purely engineering problems have been given most attention and are more nearly solved than are the other classes of problems.

The term "economic problems" as here used refers particularly to the settlement of irrigation projects, the sale of land and of water rights, success of the farmer and his ability to pay assessments, and management and operation of irrigation systems, including delivery of water to irrigators, canal upkeep and so on. Irrigation enterprises are just beginning to give careful attention to these questions. The urgent need of systematic methods of management is just beginning to be recognized. The United States reclamation service has done a great deal toward standardizing operation and maintenance activities.

The irrigation laws of the West are not well crystallized. With respect to public control of the water supply, which is a recognized function of the respective Western states, three somewhat distinct problems are encountered. These problems are:

1. Supervision of the acquisition of water rights.
2. Determination or adjudication of rights which have vested through early use of water.
3. Distribution of water to users according to established rights.

Many of the states have workable laws governing the acquirement of rights to water and the distribution of water according to established rights, but less satisfactory progress has been made concerning determination of early vested rights. These matters are in some states complicated by the recognition of dual doctrines controlling use of water, namely, the doctrine of prior appropriation and the common law doctrine of riparian rights.

No less difficult than the legal problems which have arisen are those which concern the irrigator and the public with respect to the best use of water. The establishment of a sound system of irrigation in this country will be hastened when the majority of the irrigators clearly un-

derstand the existing relationships between water and plants, and between water and soil, many of which have not been fully established.

Present Irrigation Needs and the Agricultural Engineer

Among the many irrigation needs of the West at this time, three which stand out pre-eminently above the others, are:

1. Complete determination of vested water rights.
2. Means of financing and otherwise assisting settlers on new projects.
3. A means of limiting the quantities of water which irrigators apply in single irrigations to the retentive capacities of the soils irrigated.

Two systems of determining vested water rights have been developed—the court system, which too on importance first in Colorado, and the administrative board system, which had its beginning in Wyoming.

Nebraska and Nevada early copied the Wyoming system, and with slight modifications it was later followed by Oregon and California. Gratifying results have attended the operation of this system, whereas some of the states following the Colorado system have made substantially no progress. It is, hence, impossible to ascertain whether or not there is any unappropriated water in many of the streams since these states, of which Utah is an example, have incomplete records, if any, of the vested rights. This condition seriously interferes with irrigation development, and must be removed. The field for the agricultural engineer in stimulating speedy determination of vested water rights is indeed a large one.

An urgent need of irrigators on new lands is some provision for financial and engineering assistance. Many failures are made because of lack of proper preparation of land and consequent inability of the farmer to irrigate efficiently. It was pointed out above that the ultimate cost of preparation of land for irrigation, which must be met directly by the farmer, exceeds the total cost of irrigation works, yet irrigation construction has usually been guided by the best engineering talent, while land leveling and preparation has been given comparatively no guidance and certainly no careful study. This untrodden field is also awaiting the attention of the agricultural engineer.

The third need mentioned which is really greatest in importance is that of getting irrigators to discontinue the application of quantities of water far in excess of those which the soils can retain. It is estimated that there are in the West over 1,000,000 acres of irrigated lands which need drainage. Assuming an average cost of \$25 per acre, reclamation of these lands will cost over 8 per cent of the cost of irrigation works up to 1910. But the cost of reclamations is no doubt small in comparison to the loss due to decrease in soil fertility and crop failures, partial and complete, caused by over-irrigation and water-logging of soil. And yet the area of water-logged land is increasing every year, and crops continue to be lost, frequently because landowners are unable to secure the funds needed for drainage.

These conditions emphatically urge the necessity of adopting methods of prevention—the most needed of which is decreasing the amount of water used in irrigation. No doubt much good would come from the application of our present knowledge in the solution of these questions, but yet there is very urgent need of extensive study of irrigation methods as related to permeability of soils to water with a view of obtaining quantitative data upon which to base preparation of land for irrigation and methods of application of water. Here again, both in the investigations needed and in the applications of the results, the service of the agricultural engineer—the engineer who is determined to better farming conditions in this country by the application of engineering principles to farm problems—must be depended upon.

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POULTRY

POULTRY AS A HELP TO THE FAMILY INCOME

By A. E. Vandervort.

Most people residing in suburban homes and country towns keep poultry, and the number of eggs thus produced is enormous, but the haphazard methods of care make these flocks in the main of little account to their owners, as the receipts from the individual flocks are small. It has been demonstrated that poultry can be made to pay, even if in limited quarters, and when it is necessary to buy all the feed. With care and judgment a small poultry plant can be made the source of a considerable income to any family having a small piece of ground to devote to the fowls, and

with no more work than is given to the household chores. An hour a night and morning will care for a flock of hens that will return a profit of several hundred dollars a year.

The methods of caring for poultry and rearing chicks have become so simplified with advanced knowledge that it is no longer the work it used to be. With the best grades of commercial chick feed, chicks that are properly hatched from strong parent stock, can be raised with very little loss. It takes but a short time to attend to 300 to 500 chicks in brooders or colony houses, when the work is done systematically. The feeding of hens is also much simplified, especially when a dry mash from self-feeding hoppers, is becoming quite popular with some, who claim they get just as good results as when they went to the trouble to moisten it. This we have always contended that moisture did not increase the value of the mash, but unless the hopper is rightly constructed there will be considerable waste. Whether it is advantageous to keep the mash before the fowls all the time is a question that for ourselves we have not yet decided, but shall try the two methods in the near future. We know that roasting chickens can best be raised by hopper feeding and like the plan for free range stock intended for breeders and layers, but do not know that it is the best method for laying hens as we want them to exercise. The plan we shall pursue is to feed grain in the litter and keep the mash mixtures, beef scrap and grit in a hopper. Whether the hens will fill on the ground feed to the exclusion of scratching for the dry grain in the litter we do not know, but in such case we will close the hopper until the middle of the day, which we think will bring them to their senses.

If hopper feeding is the success for laying hens that its advocates claim, then the work of caring for the fowls can be materially decreased so that a person having a spare hour night and morning could easily tend a flock. Think of what a hundred or even fifty hens well cared for can be made to produce. Certainly \$100 or \$200, and this would be a material help to any family. In time this would buy a home, or be a nest egg in case of calamity.

Some think because they rent property they cannot go into poultry culture to any extent or with any degree of safety, but this is not the case. A poultry plant can be so constructed as to be readily moved. Of course, it is not a desirable job to move a poultry plant of any capacity, but it can be done with little more labor than moving the household effects. I know a man who farms for poultry on a small farm. He had a small capital and knew that if he invested in land he would not have suitable buildings or money to swing on, so he constructed a number of comfortable hen houses, colony houses and brooders, rented a farm and went to work. He is now on a fifty-acre farm within easy driving distance of a city, has a good house, barn and orchard and pays an annual rental of \$100. He keeps a horse and a cow, lets some land to halves for crops cuts hay enough for his stock, raises a nice crop of potatoes and a garden and devotes the rest of the farm to the hens. These are kept in houses ten by twelve feet, of which he has a dozen or more, and keeps about 500 hens. The houses he built himself, and can be taken down and set up readily; the largest piece being 4.5 by 12 feet, so that two men can easily handle it, and four of these houses go on a lumber wagon. The houses are placed at convenient places over the farm and the birds being allowed free range. No hatching is done, the chicks being purchased direct from

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the incubator, all males sold as soon as they reach two pounds weight, and as the pullets mature the old hens are sold off and their places given to the pullets. The entire plant did not cost over \$250 and with it this man cleared over \$1,000 the past year.

Even with a small capital there are plenty of chances to get into the poultry business, but many who wish to make it a paying side issue hesitate about putting any money in buildings and other necessary appliances. They buy a few common eggs, set them under a hen and expect from this simple start and the investment of half a dollar to make a fortune. Or, perhaps, they buy some farmer's late pullets or old hens at market price, if they cannot find him down lower, and when winter comes wonder why they don't lay. Such people contend that there is no money in hens. If one enters the poultry business he or she should do so with the determination to stick to it and make it pay. If you are unsuccessful the first year keep right on sawing wood. Success will come if the desire is strong enough and the work is diligently pursued.

SWAT THE COCKEREL—MAKE HIM A CAPON

By C. S. Anderson.

While you are swatting the old "rooster," swat the young one and make him a capon. June is the best time for caponizing the surplus cock-

erels. If young birds are beginning to develop combs and wattles, they are ready for the operation. The heavy breeds should be caponized at about 2 to 2½ pounds, the light breeds 1½ to 2 pounds. Rocks, Wyandottes and Reds make the choicest capons.

Many people have hesitated going into this phase of poultry production because of the common opinion that the operation was a difficult one. This is not the case. With very little experience an operator should not have over 5 per cent loss. Since these nearly all result from a severed artery at the time of the operation, such birds can be killed at once, and used for food. One can become familiar with the details of the operation from the directions which accompany each set of instruments, or from Farmers' Bulletin No. 452, United States Department of Agriculture, Washington, D. C.

Practice shows that a ten-pound capon can be grown on the same amount of feed and in the same time as an eight-pound cockerel. On the most undeveloped markets capons bring from 3 to 6 cents per pound more than cockerels, and when well established seldom sell for less than 18 to 25 cents per pound.

It is not only the greater weight and high selling price that makes capon raising attractive, but their sweet meat of finer flavor wins a place for them on every table.

LIVE STOCK

HOT WEATHER RULES FOR THE WORK HORSE

1. Load lightly and drive slowly.
2. Stop in the shade if possible.
3. Water your horse as often as possible. So long as a horse is working, water in small quantities will not hurt him. But let him drink only a few swallows if he is going to stand still. Do not fail to water him at night after he has eaten his hay.
4. When he comes in after work, sponge off the harness marks and sweat, his eyes, his nose and mouth, and the dock. Wash his feet, but not his legs.
5. If the thermometer is 75 degrees or higher, wipe him all over with a damp sponge, using vinegar water if possible. Do not wash the horse at night.
6. Saturday night, give a bran mash, lukewarm; and add a tablespoonful of saltpetre.
7. Do not use a horse hat, unless it is a canopy top hat. The ordinary bell-shaped hat does more harm than good.
8. A sponge on top of the head, or even a cloth, is good if kept wet. If dry it is worse than nothing.
9. If the horse is overcome by heat, get him into the shade, remove harness and bridle, wash out his mouth, sponge him all over, shower his legs, and give him two ounces of aromatic spirits of ammonia, or two ounces of sweet spirits of nitre, in a pint of water; or give him a pint of coffee warm. Cool his head at once, using cold water, or, if necessary, chopped ice, wrapped in a cloth.
10. If the horse is off his feed, try him with two quarts of oats mixed with bran, and a little water; and add a little salt or sugar. Or give him oatmeal gruel or barley water to drink.
11. Watch your horse. If he stops sweating suddenly, or if he breathes short and quick, or if his ears droop, or if he stands with his legs braced sideways, he is in danger of a heat or sun stroke and needs attention at once.
12. If it is so hot that the horse sweats in the stable at night, tie him outside, with bedding under him. Unless he cools off during the night he cannot well stand the next day's heat.

SOME POINTS IN MATCHING HORSES

Matching horses is an art and it requires some skill and judgment to bring together a pair of horses that resemble each other in all the characteristics sufficiently to work in harmony. In order to do this successfully it is necessary to have more than the color of the animals in mind.

While it is desirable to have a team of horses closely alike in color and markings, these are not the only characteristics. Action comes first, when considering the matching of horses. Proper action, strong, clean, vigorous movements of the feet and legs, attract a buyer more quickly than anything else.

Style is required in the action of any class of horses. A snappy straight and balanced movement of the motive apparatus, each animal standing up to the bit in about the same way, makes an attractive team and is pleasing to the eyes of the buyer and of the man who drives it.

In a farm team, strength and conformation possibly might be placed before action, at any rate it should come second.

A team ill-matched in regard to strength and staying powers is a mighty poor asset, as far as a team is concerned. In selecting horses to work against each other in a team it is important to get them in general conformation as nearly alike as possible, good and strong behind, and muscled well in the back and loin. short and thick in the middle—with

muscles, not fat, beneath the hide.

Size to a certain extent may be sacrificed for strength and conformation, but only within certain limits. A difference of 100 pounds or so in weight does not matter much when a pair is being matched up, but if much more than that the difference in size will be too clear and detract from the value of the team. Size is an important matter, but it comes after strength, and conformation follows action in relative importance.

Color comes last of all in the major points to be taken into consideration. A difference in color, however marked, is among the least objectionable features in a team. Yet, strangely, some horses are matched up so unlike in action and temperament that the whiffle tree of one is always scouring the wagon wheel while the other is drawing ahead keen and strong to the bit. The team is so unlike in strength and conformation that one horse is fagged out a long time before the other shows fatigue.—W. H. Underwood.

RAISING CALVES

Feeding the cow well before calving insures a strong, healthy calf. The best time to wean the calf is after it takes the first milk. Early weaning makes it easier to teach the calf to drink.

Everything about the calf should be scrupulously clean.

Milk from infected cows or from a creamery should be pasteurized before it is fed.

Calves should be fed sweet milk of a uniform temperature and should always receive a little less than they desire.

All calves should be fed regularly; very young calves should be fed three times a day.

At first the calf is fed whole milk, the quantity being gradually increased. Skim milk is substituted as soon as practicable and if cheap is continued until the calf is six months old. Ordinarily the maximum quantity of skim milk that can be fed economically is twenty pounds a day. When the calf is two weeks old, grain and bright, clean hay should be offered; the quantity fed should be increased as the calf's appetite demands.

Milk substitutes are not equal to milk, but give fair results when used with care.

Quarters must be clean and dry, with plenty of bedding.

Stanchions save milk and prevent the calves from sucking one another.

Horns are more easily prevented than removed.

Water is necessary for calves.

Marks for identification should be plain without disfiguring the animal.

Calf diseases are largely the result of filth and carelessness. Prevention is cheapest and best.

Young dairy stock should have all the hay they will eat, and grain in proportion to weight.

The heifer should be bred to freshen when about two years old. Handling, before freshening prevents shyness.

Fall calving usually gives best results.

The young bull should have an abundance of feed, plenty of exercise, and not be allowed too heavy service.

BOYS, KEEP YOUR PIGS WELL FED AND HAPPY

Your success as a pig raiser depends very largely upon the way you feed them. Feeding is the important part of the pig raising game and must be understood.

All farmer boys know what pigs like to eat. How they relish corn and a slop made up of some ground feed and some skim milk. But unlike the cow or horse the pig cannot eat large amounts of coarse feeds, such as hay or straw. Then you have also noticed that young pigs eat different

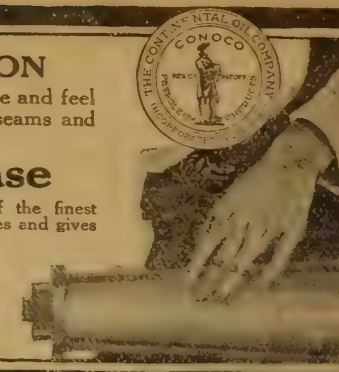
A TEST FOR FRICTION

Rub your finger over the surface of an axle and feel how rough it is. It is covered with tiny seams and pores which cause friction. Use

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feeds than older pigs that are being fattened for market. And how often have we seen the old sow, when she has a litter of pigs and is kept in the pen for a long time, try to eat the mortar from between the stones in the wall, or root in the earth to find small stones, and crush them between her teeth and swallow them. Many a farmer has had trouble raising pigs because the mother pig has often eaten her own young. Have you ever wondered about these things? They can all be explained and it is nice to know about them before one tries to raise pigs so he can feed them rightly.

In order to tell you about the secrets of feeding we must use a few big words which at first you may think have little or nothing to do with pigs. But they have, and they are just as important with other classes of livestock also.

The first word is protein. Muscles are made largely of protein. The white of an egg is nearly pure protein. This is the part of the feed that makes the young pigs grow. Milk is rich in protein and corn is not. That is why the young growing pig lives mostly on milk and eats but little corn until later in life. The sow that is soon to give birth to a litter of pigs must receive lots of feed rich in protein and less corn, so that she can build up the bodies of the little pigs. The sow that eats her young has a great desire for feed containing much protein, and for lack of anything better she eats her own pigs. How she would enjoy a little tankage in her feed each day, and by feeding it a litter of nice pigs might be saved. Protein is an important part of any ration.

Carbohydrates is a big word, but an important one in the pig feeding business. Sugar and starch are good examples of carbohydrates and every feed has considerable of them in it. They help to make the fat on pigs.

You all know what fat is. When pigs are being prepared for the market the amount of protein is cut down a little and more carbohydrates and fat are fed. At this stage of the game the pig just lies around and takes things easy. He quits his running and playing. He is content to sleep and eat. The shorter the distance between his bed and the feed trough the better he likes it. Then it is that his sides and back smooth out and his body becomes round and plump, because he is gaining 1½ to 2 pounds per day.

The last class of foods is the minerals. I wonder how many of you know that pigs, and all animals in fact, need lime and many other minerals? Nearly all rations furnish enough of these feeds, but once in a while not enough lime is fed. Bones are made up of lots of lime. The mother pig that is soon to give birth to young is using lime from her own body to make the bones of these little fellows. And after they are born she gives off much lime in her milk so that the bones of the youngsters can grow and become strong. At this time her feed should contain considerable lime and other minerals. A little alfalfa hay in a rack where she can help herself to it will make up for what is lacking in any other ration. It is natural for the pig to root in the ground to find roots to

eat. But that old sow or young pig that is rooting great holes in the ground for a rod or two in every direction, or is eating the mortar from between the stones in the wall, knows that there is something lacking in her feed and is looking for minerals to supply the need.

Protein makes real growth by building up muscles.

Skim milk, oil meal, tankage, oats, bran, alfalfa and clover pasture furnish protein for the ration.

Carbohydrates and fats finish the pigs for market.

Corn, barley and rye are the important fattening feeds in the order named.—Wisconsin Livestock Breeders' association.

FEEDING A FEW CATTLE AS A SIDE LINE

By H. W. Swope.

During past years it has been our aim to feed a few cattle as a side line during the winter.

To have cattle that will produce weight I look first of all to see that they have a good frame and are free from any disease. They must be wide between the fore legs, lengthy and straight on back and belly. I very seldom buy a fat animal unless I have a place to dispose of him at an early date.

We aim to fatten some from our own herd each year also, such cows that are not producing profitably. For fattening purposes the Shorthorn and Dutch Belt cattle are my preference. The Herford cattle are also good fat-

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teners, but pretty scarce the past two seasons.

Our aim is to buy and feed so we will have a net profit of from \$10 to \$15 per head averaging all the way through. We feed from 10 to 30 head or what we can pick up at a reasonable figure.

The cattle are all turned into a pen together. They are left out each day so they can get a little exercise and they are given water during the middle of the day. I am careful to see that they have plenty of good dry bedding and their pen, which is a covered structure and protected from the cold winds, is always kept clean, all manure being removed at set intervals.

In feeding I give small quantities at first and gradually increase this along until I have each animal on full feed. A variety is given. We never feed all one kind of grain continuously. Each animal on full feed is allowed one quart oats, three quarts of bran and four quarts cob meal, to this every other day we feed a small amount of cottonseed meal. During noon hour they are given roughage, hay and straw mixed, and all cut up with some roots or pumpkins.

We used to raise what I thought fairly good crops, but on the same land today all things being favorable, we get better yields and are able to turn the surplus into profits as I have already outlined by feeding a bunch of cattle each season.

KEEP OUT TUBERCULOSIS

The department of agriculture is nailing large hangers to livestock sections with big type heading, "Keep Tuberculosis Out of Your Swine." After referring to the great loss incurred because of certain packing houses and buyers determining to avoid districts where tuberculosis is common, or else insisting upon buying hogs subject to post mortem examination with the loss falling on the producer, it gives the following regarding prevention:

"Raw milk from a tuberculous cow will sooner or later certainly carry the germs of tuberculosis to your hogs. A little care will prevent this.

"Scald all skimmed milk, buttermilk, or whey. Even boiling will not lessen their feeding value. Either scalding, boiling or pasteurizing—that is, heating to 145 degrees Fahrenheit and holding at that temperature for thirty minutes—will kill all germs of tuberculosis and also render harmless stray germs of many other animal diseases. No farmer, unless his herd is tuberculin tested and free from tuberculosis, should feed his skimmed milk raw to his swine. He is taking an unnecessary risk of having them rejected at the slaughter house.

"Raw skimmed milk and buttermilk from creameries and whey from cheese factories are particularly dangerous. If there happens to be only one tuberculous herd on the creamery route, the skimmed milk from that farm may spread tubercle bacilli through all the milk in the skimmed milk tank. Cook all raw milk taken home from the creamery. Better yet, join with your neighbors in insisting that the creamery shall pasteurize skimmed milk before it is delivered. Such pasteurization prevents the creamery from becoming a distributing point for animal diseases, the germs of which get into milk. If your creamery delivers pasteurized skimmed milk, see that your own cans are sterilized before you take your share. The little raw milk left in your own cans may contaminate the pasteurized milk furnished by the creamery.

"Raw garbage, raw slaughter house offal, the raw flesh of dead chickens, or other carrion also are very liable to contain germs of tuberculosis that will infect your hogs. Cook all raw garbage or meat before you give it to your animals. Garbage so prepared is excellent food for hogs, provided it is not decomposed before it is cooked. Keep garbage containers

clean, and construct piggeries where sterilized garbage is prepared and fed, so that they may be cleaned readily. Prepared tankage from slaughter houses is free from danger, as its preparation involves thorough cooking or sterilization.

"The dropping of tuberculous cows, especially of those in which the disease is of long standing, are almost certain to contain large number of tubercle bacilli.

"Hogs having access to manure or bedding from such cows are almost certain to get the disease. The safest

plan is to keep your hogs absolutely away from your dairy cattle, unless your herd has been tuberculin tested and is known to be free from tuberculosis. The risk more than offsets any feeding advantage.

"In the case of steers or other cattle known as 'feeders,' it is comparatively safe to allow hogs to follow them, as the disease is not very common among these animals, and they usually are sold off the farm before the disease, if contracted, develops to a point where their droppings would be infected."

The Weed Law

For the information of our readers we are giving below a copy of the law on weeds:

An act providing for the destruction of noxious weeds and imposing a penalty for the violation of the provisions of the same; authorizing county commissioners to appoint county road commissioner ex officio weed inspector and prescribe his duties and fix the time for destroying noxious weeds and provide that notice of time fixed shall be posted or published and designate other weeds to be destroyed not enumerated in this act.

Be it enacted by the legislature of the state of Utah:

Section 1. Noxious Weeds to Be Destroyed by Property-owners.—Every person, company or corporation, owning, controlling or occupying lands in this state, once in each year and oftener if required as hereinafter provided, shall cut or destroy all weeds known as thistles, burdock, cockleburs, Canada and Russian thistle, and all other weeds that may be designated as hereinafter provided, and at such time and in such manner as shall effectually prevent them from bearing seed; provided that this section shall not apply to uncultivated desert or mountain lands.

Section 2. Id. On Rights of Way.—Every person, company or corporation owning the right of way for a reservoir, dam, canal, ditch or any kind of an open artificial water course, located or running through either private or public property, for the conveyance or conservation of water for general irrigation purposes, or for public use of any kind, in this state, once in each year and oftener if required as hereinafter provided, shall cut down or destroy before they mature their seed, all thistles, burdocks, cockleburs, sandburs, prickly lettuce and other noxious weeds that may be capable of dissemination through the agency of said water courses, or that may be found growing along the right of way of such reservoir, canals, dams, ditches or other water courses.

Section 3. Id. On Railroads.—Every railroad company operating in this state shall once in each year and oftener if required as hereinafter provided, clear its right of way of thistles, burdocks, cockleburs, Canada and Russian thistle and other noxious weeds before they mature their seeds; provided, that this section shall apply only to rights of way that abut, lie contiguous or adjacent to cultivated lands or pasture lands inclosed by a fence.

Section 4. Penalty of Non-compliance.—Any person or persons, company or corporation or railroad company in this state failing to comply with any of the provisions of sections 1, 2 and 3 of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not less than ten dollars nor more than three hundred dollars, said fines to be recovered with costs in any action to be brought in the name of the state by the county in which said lands, right of way, reservoirs, dams, canals, ditches, or other water courses are situated.

Section 5. Duty of County Commissioners.—The county commissioners of the several counties of this state shall at least once in each year and oftener if deemed necessary, require the county road commissioners

of their respective counties to clear the public roads in the county of noxious weeds and the costs of the same shall be paid out of the county fund. And said county commissioners shall, whenever petitioned by 25 landowners of the county, appoint the county road commissioner ex officio weed inspector and authorize him to inspect the lands and rights of way of the county, and they shall prescribe all other duties of said weed inspector that may be deemed necessary for the enforcement of the provisions of this act. The actual and necessary expenses of said weed inspector shall also be paid out of the county fund.

Section 6. Id. Fixing Time by Ordinance.—The county commissioners may, by ordinance, fix the time for the destroying or cutting of noxious weeds as in this act provided, and provide for the posting or publishing of notices announcing the time allowed for such purpose, and may require that said noxious weeds be destroyed oftener than once in each year and may designate and order the destruction of other weeds not enumerated in the act.

Approved March 20, 1911.

FOUR BAD WEEDS

The first appearance of either of these weeds should be the sign to fight—fight them to a finish. Once they get a start in any community they are bad to destroy.

Descriptions and Remedy

Canadian thistle (*Cirsium Arvense*); unlawful weed. The weed is a perennial, with prickly leaves and with a strong, far-reaching rootstock, the smallest part of which is capable of growing and originating a new plant.

Treatment—Clean cultivation. Do not allow a shoot to appear above the surface. Plow shallow, then drag as many roots to the surface as possible; follow this by regular cultivation either by hand or with some implement. After the second year a cultivated crop may be planted. All weeds with a running rootstock can be eradicated by the above method.

Bull thistle (*Cirsium Lanceolatum*), unlawful weed. The weed looks like the Canadian thistle, but different in having a larger head, broader leaves, a tap root in place of a running rootstock and is a biennial.

Treatment—Cutting below the crown before they go to seed.

Burdock (*Arctium Lappa*); unlawful weed. It is a biennial, bears fruit the second season. Found in all parts of the country.

Treatment—Cut out the crown during the early summer. Second or third cutting is sometimes necessary. Do not allow them to go to seed.

Cocklebur (*Xanthium Canadense*); unlawful weed. The weed is an annual, growing from the seed each year. All the seeds do not germinate the first season. Found in nearly all parts of the county.

Treatment—Cut all plants before they go to seed. Work must continue for a number of years, due to the delayed germination of the seed. Practice clean cultivation and rotation of crops.

CUTTING

To the great relief of the neighbors, the snobbish and unpopular Jones family were moving. While the

Wasted Grain and Time Could Have Paid Your Thresh Bill

Save your grain from the straw stack. Hire the man with a Red River Special, or get our "Junior" Red River Special and thresh your own grain. "We know that this separator saved enough grain to pay our thresh bills," says W. B. Sharp and 13 other farmers of Cordell, Oklahoma, after threshing with a

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THE UTAH FARMER

Lehi, Utah

furniture was being brought out some difficulty was experienced in removing a pianoforte from an upper room, and someone proposed getting it through a large window and sliding it down. Then came a suggestion from the Jones's nextdoor neighbor, who had long fostered the deepest enmity toward them, though until now she had attempted to conceal it. "No," she said acidly, all her pent-up bitterness at last showing itself in her tone, "let it come out as it went in—on the instalment system."

Alfalfa Weevil Can Be Controlled

Simple Cultivation Methods Will Rid Fields of This Pest

The Utah Agricultural college has just formulated a set of directions for the Western farmer to aid him in controlling the alfalfa weevil. These directions are as follows:

When the first crop of alfalfa shows signs of serious injury, it should be cut and removed from the field as rapidly as possible. Then the field should be gone over with a spring-tooth harrow or alfalfa cultivator. This treatment should be followed with a heavy brush or wire dragging. If the field is heavily infested with worms, it may pay to cross drag it. This treatment, if properly carried out, should leave the field with a fine dust mulch over the surface and the alfalfa stems bare, all the leaves being torn off them.

Several benefits accrue from this method. The ground is in better condition to carry a second crop and the harrowing and dragging have killed many of the larvae and tender pupae. The larvae that survive the treatment have to crawl through fine dust to reach the stems, and the few that really get to the stems find little upon which to feed. A few hours in the dust or unprotected on the stems by shade, gives the hot sun an opportunity to kill many of them. It is well not to irrigate for one or two days in order to allow the sun and dry dust to kill the larvae. The second crop will now start quickly and grow practically unmolested by the weevil. On land treated by this simple method the gain has been from 1½ to 3½ tons per acre for the full two cuttings, produced at an outside cost of \$1.25 per acre.

Drags

There are many forms of drags and not all of them are successful. A drag made by tying together at the butts a number of pieces of brush might as well be kept off the field. There is no means of holding this brush down on the ground where it will do the work intended. In making a successful brush drag, keep the brush as flat as possible. Keep the butts low and let each be separately fastened on top of a plank or pole or pushed through holes bored in the pole. The butts may be nailed, bolted, or wired into place, and another plank laid over the butts and firmly fastened down will aid in making the brush more secure. An ordinary harrow laid on the brushy part of the drag will aid in evenly weighting it and will help to drive the brush into the hollows and crevices and to tear the leaves and stubble. If desirable, a plank or log may be laid across a drag on which the driver can stand. In any case the brush needs weighting down in some manner.

Wire Drag

A wire drag is made by taking a piece of chicken wire and a piece of hog wire and fastening them under a spike-tooth harrow, allowing the wire to extend back ten feet behind the harrow. Weight down the back end of the wire. This makes a very effective drag.

Rotation

It does not pay to run alfalfa longer than five or six years in a weevil-infested district. Old alfalfa is always more seriously injured. It seems to lack the necessary vitality to put forth the several extra crops of leaves necessary where the worms are numerous. Alfalfa can be readily started even in most severely infested regions by planting with a nurse crop.

Clean Culture

To destroy the hibernating places as far as possible should be the aim of a careful farmer. The means: Clean up the weeds, grass and rubbish along the canals, ditches and fence rows. Destroy old stack bottoms. Do not leave small piles of hay in the field. Burn or plow under the dead vines, weeds, stalks and the like, left in the garden at the end of

the season. Do not leave large manure piles or other unnecessary materials around the barns and outbuildings. Cut and remove the alfalfa along the borders of the fields, as well as you do that in the center.

USE OF WATER IN IRRIGATION (Continued from Page 3)

There should be sufficient moisture stored in the soil at planting time to last the crop well toward the end of June or middle of July. Once irrigation has begun the soil should not be allowed to dry out until the crop is mature and ready to dig.

Corn and Sorghums

These crops should have most or all their moisture supplied to the soil before planting; especially where gravity water is used, since the flood waters may be reservoired in the soil at planting time when water is plentiful. When later irrigations are necessary, early watering will increase fodder growth where ensilage is to be made. Where the crop is grown for mature grain, very little water need be applied if the soil has been filled at planting time and cultivation has been continued.

Amount of Water to Apply

A good loam will hold about five acre inches of water in the upper six feet of soil. With this as a basis, it is estimated that five acre inches of water should be the maximum applied at one time, and in many cases three acre inches will be plenty.

It is relatively easy to calculate the amount of water applied when the units of measure are understood. A stream measuring one second foot will deliver one acre inch per hour. For example, therefore, a stream of 2½ second feet running two hours on one acre of land will give a total application of five acre inches, or a stream of three second feet will deliver three acre inches of water to one acre in one hour, or five acre inches to one acre in one hour and forty minutes.

The irrigator who wishes to get most out of the water and land under his control will study the water requirement of his land and crops, then apply the water only when it is needed and only in the amounts which the soil will hold.

WETTING SPOILS 5,016,000 DOZEN EGGS EACH YEAR

Approximately 5,016,000 dozen eggs spoil needlessly every year in cold storage simply because someone has let clean eggs get wet or has washed dirty eggs before sending them to market. Careful investigations of large quantities of stored eggs show that from 17 to 22 per cent of washed eggs become worthless in storage, whereas only 4 to 8 per cent of dirty eggs stored unwashed spoil. The explanation is simple. Water removes from the shell of the egg a gelatinous covering which helps to keep air and germs out of the inside of the egg. Once this covering is removed by washing or rain which gets to eggs in the nest, germs and molds find ready access to the contents and spoil the eggs.

This enormous loss in storage eggs largely can be prevented if producers and egg handlers, especially during March, April and May, will refrain from washing eggs destined for the storage markets and take pains to reduce the number of dirty eggs by providing plenty of clean, sheltered nests for their hens.

Millions of eggs spoil in storage because they have been exposed to dew, rain, dirt, and sun in stolen nests in the grass or fence corners.

In view of this great loss of valuable food, the department urges country storekeepers and hucksters not to accept washed eggs for shipment in case lots. Shiny eggs, especially in the early spring, probably have been washed. All washed eggs purchased should be sold locally for immediate consumption.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

BARGAINS IN IDAHO RANCHES AND FARMS

240 acres, nearly all irrigated; 10 acres grain, 20 acres pasture, and balance in hay; excellent water right, good house, nice yard and trees, 170 cattle, 24 horses, machinery. Price, complete, \$24,000.

230 acres, six miles from county seat; has good water right; splendid ranch property; now grows 100 tons of hay. Price, \$8,000. Terms, one-half down and balance 7 per cent.

160 acres, two miles from county seat; house, fenced, in fair condition; one-half cultivated; balance good natural hay ground, close to outside range. Price, \$5,000. Terms, \$2,000 and balance to suit, 7 per cent.

We have a number of other similar excellent farms and ranches in best section of Idaho, which are exceptional purchases at the present time.

FEDERAL LAND COMPANY
Ogden, Utah.

ARTESIAN WATER

When Fillmore was the State Capital nobody dreamed that there was a great belt of artesian water below us. Our soil down here is great. The climate is better than Salt Lake and the chances for one's becoming independent can be excelled nowhere else. We need new blood to awaken us to our fine opportunities. I want to talk to you before you buy. Address O. P., care of Utah Farmer, Lehi, Utah.

An opportunity for the right party is a fifty-acre farm at Elberta, Utah, suitable for the growing of alfalfa, fruit, beets, grain, garden truck or any other farm products. The best kind of soil, with good water right at a reasonable rate. This property adjoins a good school and is located on a railroad. Will take \$3,750 for this place, with suitable terms for payment. This is a real buy for the man that wants a small farm at a good price.

For \$75.00 an acre you can buy 50 acres of Elberta's fertile land, with prior water right at \$1.00 an acre. What do you think of this buy. If you are looking for a small farm at a low price, investigate this further. We will be glad to furnish you with more information.

We are dealers in farm lands. Write us your wants.

W. C. ALBERTSON
604 Dooly Bldg.
Salt Lake City

FOR SALE

Forty acres of land 3 miles west of Lehi, Utah; 35 acres broken this spring and ready for crop; full water right; also new fence all around; price \$3,800, on easy payments, or will trade for Salt Lake real estate.

A. H. BOXRUD,
57 Sixth East, Salt Lake City.
Phone Wasatch 4661-W.

MILLARD COUNTY

Do you know that there are some of the best bargains in Utah to be had in the sugar beet section of Delta and Deseret? Productive land with dependable water located near railroad; excellent climate; eastern capital is spending a million dollars opening up the first sugar factory in Millard county. I know of some cheap lands that can be picked up for a song. I live in Millard county and expect to stay. We are just waking up down here. Now is the time to get in. Address A. J., care of Utah Farmer, Lehi, Utah.

BUY A FARM FROM A FARMER

Millard county has as good water rights as southern Idaho. It has a better climate. The soil is very productive. Capital is building the largest sugar factory in Utah. This means that prices are going up. There are some fine bargains down here. You can't lose on them. I know the best that is to be had. I have farmed here for 25 years and will be pleased to give you the result of my experience.

NELS L. PETERSON,
Deseret, Utah.

See that the shelves in your preserving closet sag just a little this year.

A quart of canned peaches or tomatoes on the shelf is worth a bushel rotting on the ground.

RELIABLE FARM BARGAINS

We have one of the best and largest cattle ranches for sale that can be found anywhere in the western United States. This ranch contains three hundred thousand four hundred acres (300,400). This land has plenty of water for irrigation purposes, sufficient to raise hay enough to feed the cattle during the winter season. There is lots of high land on this ranch, making an excellent summer range. It runs down into the lowlands and tule swamps, making a first-class winter pasture. This ranch controls the water for 25 square miles. There are thousands of cattle on this ranch that may pass with the sale if purchaser desires. This ranch is near the railroad and about fifteen miles from one of the largest towns in northern Utah. Price, \$250,000. Terms may be had.

On 14th South, 5c car line, we have one-acre tracts for sale; \$450 per acre; 10 per cent down and 10 per cent each year; 6 per cent interest.

We sold in Cache valley last week to a number of Davis county and Cache valley farmers, some first-class land. We still have a number of 40 and 80-acre tracts for sale, right on the railroad, right near good schools, nice town, first-class water for domestic purposes, at from \$100 to \$150 per acre. We also have some first-class pasture land adjoining this at \$10 per acre. This land can be had for 10 per cent down, 10 per cent a year, at 7 per cent interest on the balance.

In the Bear River valley we are still selling some farms belonging to people living in Germany. We have the power of attorney to act for these people and can deliver the title. Some of these people never expect to come to America again and are afraid they are going to lose their land. We are offering these farms for sale at from \$25 to \$75 per acre, less than rent. These farms can be rented for ten years, paying interest on a good deal more money than they cost. Situated in the heart of the Bear River valley. Some of the best farms in Utah; 10 per cent down, ten years on the balance, at 6 per cent interest.

In southern Idaho we have 40, 80 and 160-acre tracts on the main line of the O. S. L., right near the town of Downey. This land is planted to crops. Some of it has nice homes and outbuildings. Price ranges from \$50 to \$100 per acre. Small payment down, ten years on the balance, at 6 per cent interest.

KIMBALL & RICHARDS,
"Land Merchants,"
52-54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.

FARM AND RANCH DEPARTMENT.

FREE FARM LANDS

The Pohont Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years. Our committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
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THE FARMERS' MARKET PLACE

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This market place offers our subscribers and readers a very good place to advertise. If you have something to sell or want to buy here is the place to tell it. These advertisements are read because they offer bargains, your bargain should be here. Take advantage of this opportunity today.

For the Seller

BARGAIN

One 28-inch Minneapolis Separator with self-feeder and wind stacker, and one gasoline tractor at a sacrifice. Both in good condition.

SAM PETERSON & SONS CO.,
147 S. State St., Salt Lake City, Utah.

GROWING OF BEETS IS BENEFIT TO YOUR FARM

Besides providing an absolutely cash crop, a certain market, the growing of sugar beets, the Utah and Idaho, also provides one of the best means of fertilization through crop rotation. Agricultural experts agree that root crops are essential in good farming—sugar beets provide the safest, surest, cash producing crops of its kind.

USE TABLE AND PRESERVING SUGAR

Selecting a Farm

By Alex. McPherson.

Most of the failures in life can be traced to the foundation on which the superstructure was built. Great nations, states, communities, or great lives are not built on a foundation of ignorance and superstition. A successful business, whether it be merchandising, mining, reclaiming arid land or farming must also be built on a foundation that is broad, deep and solid else disaster will follow.

For the last generation there has been a mad rush from the country to the city until a large portion of the population of our large cities is not far removed from pauperism.

The foundation of a city, or its source of wealth, is not in the city but in the country surrounding. Multitudes of people have overlooked this and have forsaken the foundation of our country's wealth and prosperity, seeking to build up in the densely populated centers from what? Their condition today tells the story. My brother, my sister, let us look life's problems squarely in the face. Are not the necessities of life constantly rising in price, and your earning power is not keeping pace? Why is this? Some say the tariff, others say trusts, combines, the war, and what not. They can only be partially responsible for it. It is the man on the foundation of prosperity, the farmer who is boosting prices. The farmer who has a producing farm is prospering; he is making money. No longer does he have to sell his products at harvest time for the banks will carry him, but holds them until the prices get high enough to suit him. There are so many non-producers, who must be fed, and so few, proportionately, who are producing the necessities of life. The law of supply and demand will eventually prevail. What then shall we do? There can be but one answer, "look to the farm"; look to the foundation where wealth and prosperity await you. By so doing you will not only benefit yourself but will benefit those who are left behind in the factory, the store, or the mine, by relieving competition and la-

FOR SALE

Eight registered Jersey cows.
Three registered Jersey bulls.
Nine registered Jersey heifers.
Nine pure-bred Jersey cows.
FRANK M. DRIGGS, Ogden, Utah.
Phone 108 Ogden, or 8-J Huntsville, Ut.

WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

Prices at your postoffice:

100 Butter Wrappers.....	\$.90
200 Butter Wrappers.....	1.25
500 Butter Wrappers.....	2.00
1,000 Butter Wrappers.....	3.00

Check or money order must accompany order.

bor, which will allow the law of supply and demand to regulate the prices of labor.

In selecting the farm we should select wisely. All farms are not equal in productiveness, neither are markets, neither are social nor educational advantages equal in all localities. However, productiveness is the first consideration and this is found in arid districts. The first essential factors in crop production are soil, sunlight, air and water; in fact, they are the foundation.

Soil

Soil is the first consideration. All soils will produce crops, but some soils produce more bountifully than others. The most fertile and productive soil in the world is found in the arid countries. It is a virgin soil in the strictest sense of the word, as it has never been submitted to the leaching process, which has taken place in the humid countries.

Sunlight

Sunlight is one of the most important factors in crop production, without it crops cannot grow. It necessarily follows then the more sunshine (other things being equal) the greater the growth. In the arid districts we have the greatest amount of sunshine possible, which brings wealth, health and happiness to all.

Air

Man cannot live without air, neither can crops. Air and plenty of it is absolutely necessary to maintain life in both animate and inanimate objects. Air is necessary in the soil in order that plant food may be liberated for the plants. Air is necessary around the stem and leaves of plants in order that the plant may elaborate and assimilate its food. In fact, from 92 per cent to 97 per cent of the solids in crop production are supplied from the air and sunshine. How important then are these factors in crop production as well as health and happiness in our people.

Water

"Water is a poor master, but is a good servant when you have control over it." Water dissolves the plant food in the soil. Water is the medium through which all plant-building material is distributed to the different parts of the plant and in addition to this, water is by far the largest single constituent in all plant life.

Irrigation

Farming in irrigated countries is not a haphazard business. The farmer is not subject to conditions over which he has no control. He becomes a manufacturer, a master who directs and controls crop production. By supplying the right amount of water at the right time his crop is always under

SAVE MONEY ON YOUR LUMBER BILL. WRITE US. PACIFIC COAST SAWMILL COMPANY, Portland, Oregon.

40 % Discount on Eggs

for hatching for balance of season, from Four Best Laying Strains Rose Comb R. I. Reds and White Wyandotts, Single Comb Black Minorcas and White Leghorns. Egg Fertility Guaranteed. Call or Write

E. C. BLANPIED,
Box 29, Milford, Utah.

control and can always be made a maximum one.

Markets

Markets for farm products and facilities for marketing are essential to success and must be taken into consideration. As a rule a railroad follows quickly in the wake of settlement of irrigated lands. In the arid sections only a relatively small portion of the area will ever be brought under cultivation, the larger portion being devoted to stockraising and mining, which provide splendid and never failing markets for farm products. The local demand in many instances far exceeds the supply.

THIN OVERCROWDED PLANTS

By Prof. J. C. Hogensen.

To insure a sturdy crop, be sure that you thin your overcrowded plants.

Seeds are usually sown more thickly than necessary and the extra plants resulting must be regarded as weeds. These extra plants of such crops as beets, onions, carrots, and spinach may be used for "greens" or salad, or they may be transplanted. All weeds, of course, should be promptly removed. A small hand tool, called a weeder, is useful for the purpose.

Frequent and thorough cultivation is also most essential in successful gardening. Cultivation liberates plant food, preserves moisture, and improves the sanitary condition of the soil. An effort should be made to keep a loose, dust-like mulch on the surface to prevent the evaporation of water. To maintain this mulch it will be necessary to cultivate soon after each rain or each watering. Do not cultivate while the soil is sticky.

A good hoe and a steel rake are the necessary tools, the former for use when the soil is hard or when large weeds are present; the latter for preparing the ground and for maintaining the soil mulch. A wheel hoe is very useful and will save much time and cultivating.

When watering it should be remembered that one heavy application is better than many sprinklings.

Keep a close watch for insects and disease.

USE THE ROADSIDES FOR PASTURE

Many of our roadsides could be used for pasture or to produce hay. The suggestion has often been given that thousands of acres of roadsides are wasted—are non-productive.

Many thousands of miles of roadsides are on productive soil and should be used for food production. To use the roadsides will involve little labor and no large expenditure.

Some roadsides can be used to produce hay. Such crops as sweet clover, red clover, and grasses are often found growing rankly along the roads and can be cut for hay. These crops are usually allowed to waste, though some farmers utilize them. One farm-

DUROC BRED SOWS

We are offering a few choice fall gilts, sired by the Grand Champion Richards Defender, and bred to our new giant herd boar, Richards Pathfinder. We purchased Richards Pathfinder in Iowa last December and he is the largest boar of his age we have ever seen. These good gilts will farrow during August and we are pricing them low, as we need the room.

We guarantee to please you or will refund your money and pay the express charges both ways.

RICHARDS LIVE STOCK CO.

Virginia, Idaho

"Home of the Champion Durocs."

er in Missouri always cuts the sweet clover from roadsides adjacent to his farm before it gets woody. Along limestone roads clover often grows more rankly, owing to the sweetening effect of the road dust on the soil acidity. On some roadsides, by a little seeding or by clipping the weeds, the more valuable hay crops can be produced.

Pasturing the roadsides usually offers the best way of utilizing them. Many roadsides are too rough to be mowed, and farm labor is scarce. Many fine pasture plants grow along the roads. Bluegrass and white clover frequently take the roadsides, to the exclusion of weeds. Bermuda grass, Japan clover, and other plants of good grazing qualities are found along the southern roads. Wild grasses throughout other parts of the country are abundant along roads. The pasturage of roadsides can be increased by keeping the weeds down by mowing occasionally with a machine or scythe. The farm pastures can be rested and are not so liable to overgrazing when the roadsides are used. Pasturing the roadsides does not call for much labor. Cattle and sheep can be grazed along them and valuable beef, milk, wool, and mutton produced. The old milch cow may be tethered out, or the farm cattle, herded by children, pastured along the roads. The farm flock of sheep will need to be herded, but will clip the roadside more closely and retard the growth of noxious weeds. Farmers who use these waste spaces will help produce more food, eliminate waste, produce cheaper milk and meat, reduce weeds, remove a wintering place for insects, and in addition make the roadsides and farmsteads more attractive.

GRASS CLIPPINGS FOR THE POULTRY FLOCK

Grass clippings are an excellent green feed for chickens. The backyard poultry flock of a family often lacks sufficient green feed with a consequent reduction of egg and meat production. With the easy availability of lawn clippings the city poultryman can always have green feed through the summer for his chickens. The flock can be fed daily as much of the green clippings as they will eat. If any continued bowel trouble shows, the amount should be reduced. The remainder of the clippings can be allowed to dry and fed moistened during the time between lawn cuttings.

Amounts in excess can be dried for winter use. Dried grass clippings are a good green feed for winter. They can be dried and stored in sacks. These dried clippings, moistened and fed to the flock, are a very fair substitute for the succulent green feeds of summer.

Send your order for Butter Wrappers to the Utah Farmer today.

USING THE LEFTOVERS
(Continued from Page 9)

creamy with a teaspoonful of melted butter or cream. To every cupful of potatoes, bind together with two well-beaten eggs, add a little minced parsley, if liked, roll into balls, dip in beaten egg, then in bread crumbs, and fry in hot lard; pile in a pyramid on a flat dish and serve.

Your Favorite Jellies Often Fail to Jell

When this happens, stand the mold in a basin of water containing a handful of salt and soda. A mild freezing mixture is the result. Even on the hottest days your jelly will be firm and cool quickly.

THE HOME EVAPORATOR
By W. F. Hewlett.

Perhaps a brief description of our small home evaporator which we have used four years and which is practically as good as ever, may be of interest.

We consider it one of the most useful articles on the ranch and would find it hard to do without one. It is 30 inches wide, 11 inches deep and 30 inches high, and is made of galvanized iron and strap iron braces. The back and sides are solid and the front has two doors. In the top is an opening covered with wire netting through which the surplus heat escapes. Inside are ten double trays made of one-inch strips which form the frame, and over this is stretched a heavy screen. The heat passes up from the center of the bottom through openings at each end of the trays and also through center of trays and circulates through the netting of trays on which is placed the fruit or vegetables to be dried. The evaporator is made to cover two holes of an ordinary cook stove and the work of drying is hastened or retarded as it is placed directly over the firebox or moved to back of stove. In our household my wife places the evaporator on back of stove, while cooking the meals and moves it to the

front when through cooking. Then by putting a little fuel in stove occasionally to keep up a slow, steady fire, the work of drying is not must trouble.

Ours is an apple ranch, and every year we dry all the apples we need for our own use and some to sell. We dry corn, beans, squash and, in fact, anything that can be evaporated, and for drying meat for jerky it is simply all right, as there are no flies to bother and pollute the meat. If there is anything that disgusts me it is to pass a place and see a lot of fruit or vegetables laid out for drying and the outfit covered with flies crawling all over it.

It seems to me that meat drying on the farm has been overlooked. Many a farmer has a calf or young animal to butcher, which he saves until cool weather or sells to some butcher and then pays two prices for fresh meat as he needs it. With this small evaporator butchering can be done any time of year regardless of the weather.

After saving fresh meat for home use and perhaps what a neighbor or two may want, cut the balance into one-inch strips convenient to place on the trays, dip in boiling salt water and place on trays, and in a few hours you have as fine jerky or dried beef as one could desire. The fat melts and runs into the lean meat, and the product is one that would make anyone sit up and take notice if he had never tasted it before.

After the meat is thoroughly dried, we run it through a meatcutter, place in fruit jars and thus taken care of it keeps indefinitely. It is very convenient to use in cooking for soups, gravy, Irish stews, etc., and takes the place of fresh meat to a certain extent.

Sash Curtain Hint

When hanging sash curtains—and can't secure the rods—try taking a piece of domestic the desired length and two inches wide, fold it three times to make a tape. Stitch it on the edge and work a button-hole in

each end. Drive a shingle nail in the side of the window casing and slip one end of the tape over it. Put a nail through the other hole and stretch taut and nail to the other casing. When the curtains need laundering, sew the ends of the tape together and send to the wash in the curtain.

To Frost a Bathroom Window

Make a very strong solution of Epsom salts and vinegar. Apply it with a brush, and afterward go over it with some white varnish.

A Traveling Convenience

For a person who spends a great deal of time on the road, at hotels or in the home of strangers, a flashlight is a great convenience in locating electric switches, etc. It is also very useful in locating small articles in the depths of traveling bag, trunk or suitcase, and will be found almost invaluable in a summer trip or outing.

CARING FOR LAMPS

Much kerosene trouble lies in the lamp or wick rather than in the oil. If the flame is uneven the fault is usually in the trimming; or the burner may be coated with carbon scales, which crumble down upon the wick, and by their pressure cut off the flow of kerosene. Such a burner should be thoroughly cleaned and boiled, then dried and brushed clean of lint.

A lamp should never be allowed to burn dry. Besides destroying the wick it chokes the burner with unconsumed carbon and renders a thorough cleaning necessary. With a low-test oil, too, there is considerable danger in permitting the reservoir to become low, as the heat evolved converts the oil into gas as rapidly as there is room for it to form, and the larger accumulation soon becomes a serious menace.

A wick should be trimmed by scraping with a dull knife, rather than by cutting; then the carbonized fibers will all be removed.

If the wick is boiled in vinegar and then dried thoroughly, it is relieved of

its tendency to smoke.

Never blow down a chimney to extinguish the flame. Blow across the top, or, if that is inefficient, blow against the hand held near the top. It may save a cracked chimney.

The chimney of a lamp should never become hot at the bottom part, below the flame. If it does, it indicates a hot burner and is a danger signal. Usually one can remove a chimney from a lighted lamp by grasping it at the bottom.

Lamps should be filled in the morning; then there is little space for gas to accumulate during the day. If this is neglected, do not fail, before lighting the lamp in the evening, to remove the burner and agitate the wick enough to drive the accumulated gas out before lighting. This may save an explosion. For a similar reason lamps should be set away during the day in a moderately cool place.

Where good 150-test water-white oil is used many of these precautions are unnecessary. They are recommended because of the variation in oil and its impurities. Some grades of oil, occasionally sold for the best, are much more highly charged with dangerous gases than others.—Farm Journal.

CONFIRMED SUSPICION

Uncle Mose was one of those omniscient persons who always refuse to acknowledge either astonishment or ignorance. When the circus and the sideshow came to town and the prestidigitator called for someone to go up on the stage, Mose was pushed forward.

Presently the magician was taking various wonderful articles out of Mose's garments. Lastly, he extracted a pair of white rabbits from Mose's bushy wool.

"Weren't you surprised at the rabbits, Mose?" asked his master, afterward.

"No, sah," Mose answered. "Fact is, sah, I'd been suspecting dey's some rabbits up dere fo' some time."

Home canning is kitchen patriotism.

Excursions East

via



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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE

VOLUME XIII, NO. 48

LEHI AND SALT LAKE CITY, UTAH

JULY 7, 1917

THE IRRIGATION OF SUGAR BEETS

By J. C. Wheelon.

There has always been considerable difference of opinion among farmers as to how much water is actually required for the different soils, as between the heavy clay and the sandy soils. The courts have adjudicated the water supply of streams to the canal systems and the water users, only to find in the course of time that a readjudication could and should be made, in view of the increase from year to year in the duty of water.

Canal companies have constructed large projects and have provided in the contracts with their patrons that a certain quantity of water per acre shall be delivered from the canal system to the water users each season perpetually, only to find that in a few years the duty of water has increased by skillful operation, and other and natural causes, to such an extent that the terms of the contract in this respect are often mutually abandoned.

The "duty of water" is said to be low when a given quantity of water is served to a small area of land; on the other hand the "duty of water" is said to be high when a given quantity of water is served to a large area of land.

In other words, a contract providing for a duty rate of one second foot of water to 80 acres of land in continual flow during the irrigating season of each year (usually six months) means a quantity of water sufficient to cover each acre of land to a depth of about 50 inches, and would be termed a low duty of water, while a duty rate of one second foot to 365 acres of land means a quantity of water sufficient to cover each acre of land to a depth

of 12 inches, and would be termed a high duty of water, and, because of a lack of knowledge as to the definite requirements, the present practice ranges all along between these two extremes with a strong leaning toward the larger quantity.

We are, however, just at this time beginning to learn that there is a positive and reliable source of

absolute that it applies fairly well to nearly all classes of soil, and so nearly the same in all conditions of climate that it can be relied upon for all practical purposes.

Laboratory tests have determined, however, that the amount of water transpired by crops varies somewhat with the kind of crop grown; that alfalfa, for instance, will utilize about

know that an "acre inch" of water (the quantity sufficient to cover an acre of land one inch deep) weighs 113 tons, giving us about 14 acre inches per acre per season for a 4-ton crop of hay.

We know that in most of the intermountain districts we have a natural precipitation of from 8 to 14 inches per year. Assuming that only half of this is available to the growing crop we should provide about 12 acre inches of applied water per acre as the actual requirement for the crop.

We are not possessed of the laboratory tests on sugar beets in this respect, but experience teaches us that this crop requires about the same amount of water to mature a crop as that of alfalfa hay, though applied at a different time in the season.

Right here, the sugar beet grower should learn the first and most important rule in the practice of irrigation: To supplement the natural precipitation with enough applied water to mature a maximum crop, and no more. His land is rich in plant food and every acre inch of water wasted from his farm carries away those elements in solution.

To attempt, at this time to state the exact amount of water required for sugar beets

would be unwise; the industry so far as America is concerned is so young that data is lacking.

In view, however, of some twenty years' experience in the management of irrigation systems, in which much of my business has brought me in close touch with the success and

(Continued from page 1)



testimony upon this subject in the natural law which governs the transpiration of moisture through the stems and leaves of plants, or, in other words, the travel of water from the soil through the roots, stems and leaves of plants in the process of its evaporation therefrom into the air, and, moreover, this natural law is so

400 pounds of water for each pound of cured hay, grain and some other crops taking somewhat less. This means that to make one ton of cured hay the growing crop can pass through its system about 400 tons of water. This seems an incredible quantity, but assuming it as a basis, a 4-ton crop can utilize 1,600 tons of water; we

CULTIVATION INCREASES YIELD

Greater Production Means More Money to You and Better Service to the Nation

The Irrigation of Sugar Beets

(Continued from page 1)

failures of the individual water users, I can say that as a general rule those who have made records in sugar beet tonnage have been the lightest users of water and those who have made consecutive tonnage for several years have used water most sparingly.

I have in mind the case of Mr. John Ward, who, in 1914 raised on 24 acres an average of 24 tons of sugar beets per acre; he used 14 acre inches of applied water during the season, in three irrigations; the water was measured one mile from the farm.

Mr. Albert Burt raised an average of 22 tons of sugar beets per acre on a field of 52 acres with 10½ acre inches of water for the season, this being the third consecutive beet crop; the water was measured at the farm.

Mr. John Holmgren raised an average of 23½ tons per acre on 42 acres using 14½ acre inches for the season in four irrigations, water measured at the farm. This was the tenth consecutive crop on this field.

These cases are scattered over an area of some 40 square miles and embrace a range of soils from a sandy loam to that of heavy clay. The lands were measured and planted by the sugar company and the beets were weighed over the sugar company's scales.

These yields are exceptionally high in a year that was remarkable for the heavy tonnage over the entire project. A precipitation of 8.4 inches of rainfall during the growing season which is about 35 per cent more than usual, may account in a measure for the good showing.

These cases are given, not as a positive rule, but to show what has actually been accomplished in "growing sugar beets for profit" under favorable season conditions and the most skillful field practice.

When to Irrigate Sugar Beets

In soil as deep and rich as it must be to produce a profitable crop of beets, the young beet should be able to grow for about 50 to 60 days after planting before it is irrigated. In a large field irrigation should begin before the crop is quite ready in order to anticipate the time required to get over the field. The beet should be denied the water until it has grown a shape that is long and tapering which makes for heavy tonnage, and if watered too soon the beet will grow short and flat which makes for light tonnage.

The precise time is hard to foresee but by watching the beet field every day it will tell you all about it. If the leaves begin to wilt early in the forenoon you may know that the beets have exhausted their ability and no time should be lost; if the leaves begin to wilt a little late in the afternoon don't be in a hurry. Pull up a beet here and there and draw it between the thumb and forefinger toward the small end and if you can press the juice out of the surface it is doing well. If you fail in this and the side roots are short and thick it has been needing water for several days.

How Much Water to Apply

The first irrigation should serve the crop with 4 or 5 acre inches of water. This will supply all the capillary moisture the soil can contain to a depth of 3 to 5 feet. The subsequent irrigations should be frequent enough to keep the crop growing fresh and healthy until the time to lay by to ripen for harvest.

This requires four irrigations, and oftentimes three will be found sufficient. If the soil, pressed into a mold in the hand, breaks up when the hand is opened, we may assume that irrigation should begin. The supply or head ditches should be of such distance apart in the field that the water need not be held on the upper reaches of the field too long in pushing the head through to the end of the rows.

Usually, I should say about 300 feet between these ditches; on steep laid they can be farther than on flat land.

The water should not be permitted either to run or stand too long on the surface of the land. It should be gotten on and off as quickly as possible.

The soil at this period is teeming with bacteria and other soil organisms and a sudden and copious bath may result in three evils:

First: By standing or running over the surface of the ground the air is excluded and countless numbers of these precious organisms are destroyed.

Second: So much water is applied that the plant foods are diluted so much that the plants are unable to transpire enough of the solution to feed themselves; in other words you have "put too much water in the broth."

Third: The voids of the soil (about 50 per cent of its volume) are filled with free waters which not only choke out many small plant roots, but is constantly dissolving plant foods, and when the water subsides it carries away and out of the reach of the roots much plant food which is lost to the crop forever.

Scores of analyses have shown that the free waters that have passed off, or through, or remain as ground water that has once passed through the soil carries in solution humus, nitrogen, phosphorous acid and potash in such quantities that will, in time deplete the soil of these elements.

We have been too lavish in the use of water for irrigation, many lands are already suffering in consequence.

It may be said, however, that these losses can be avoided by serving to the land only as much water as the crops can utilize, and while the rain belt farmer of the east must submit to the excessive rain falls that leach out his soil, the arid farm irrigator has the moisture conditions absolutely under his control and there is no reason why his soil should not be more fertile and productive at the end of a century than when first reclaimed.

SOME MISTAKES MADE IN IRRIGATING SUGAR BEETS

Beet growers are asking, "what about irrigation?"

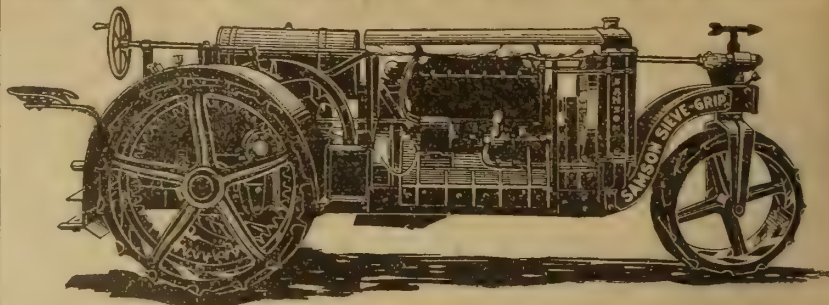
The question can not be answered in a line or a paragraph or even on a whole page, for the different beet growers.

There are so many different types of soil, varying altitudes and latitudes and different physical conditions of the soil. One man may have so handled his field that there is sufficient moisture to carry the crop for a month yet without injury for lack of moisture, while on an adjoining field, with similar soil, the beets are wilting and the leaves turning yellow, for lack of moisture.

There is one important fundamental that deserves to be always kept in mind. It is the abuse, not the use of irrigation water that does injury!

Very recently, a grower called for help, believing that some sort of disease had broken out in his field. Many of the leaves were turning yellow and most of the beets showed considerable wilting during the heat of the day. It was heavy soil. The grower was a good farmer. He thoroughly believed in working his soil deep. He had plowed deep, — yes plowed deep this spring. It would have been all right to plow deep as he usually did, in the fall, but he set the plow at about the same depth this spring. It was easy to see that he did not get the soil worked down fine and firm this spring. He lost his moisture quickly, after the beets were thinned and cultivated because again, he stirred that heavy soil deep. Just as deep as he stirred

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that heavy soil, that deep did he lose his moisture.

I discovered a few small patches of beets near the irrigation lateral that were much larger than the rest. Discovered that a few small leaks in the lateral allowed some water to escape and wet up patches of beets. They had good color. They were not wilting. He cultivated and thinned in due time. The stirring of the soil occurred soon after the irrigation water leaked out over the patches. He felt that he ought to turn in the irrigation water. But it was still June. He did not irrigate, most seasons, until along in July. Yes, I advised him to irrigate. Let the water into every other row. Make a quick, light irrigation, then camp on the job and follow with the cultivator just as soon as the soil would allow. That light irrigation will be helpful, not merely for the amount of moisture that it adds, but it will establish capillarity so that moisture from below will come to the surface and then if the grower will follow with the cultivator, with a light surface stirring and prevent a crust forming, the field can be brought back into good normal moisture status. A days delay with the cultivator may sacrifice very large benefits, however, from that light irrigation.

On another field, I found the beets

had been thinned in good season and promptly cultivated and the beets were coming along very well. Hay harvest was pushing so the grower concluded to furrow out and be ready to turn the irrigation water in some evening. Instead of furrowing alternate rows, which would have been sufficient on that type of soil, he furrowed every row and the tragedy of the situation was that he had furrowed very deep.

He was right in his conclusions that irrigation water ought to be let down as deeply as possible, rather than allow a flood irrigation or a shallow flow that will wet the entire surface.

A careful study of the field showed that he had covered nearly 15 per cent of his beets with so much soil that many would perish.

At least 25 per cent of the beets had so much soil heaped into the crowns that they would be endangered by crown rot. When the soil is thrown into the crown of the beet and then irrigation water melts that soil so that it seals over, the young beet leaves are very liable to start to decay. A fungi will form and the rot is liable to extend down into the beet. Notice how the young beet leaves spring from the center of the crown, under normal conditions.

(Continued on page 11)

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VOLUME XIII.

LEHI, UTAH, SATURDAY, JULY 7, 1917

No. 48

Observations On Marketing of Farm Produce

John T. Caine III, Director of Extension Division U. A. C.

It is always a presumption to think that one can predict future prices of food stuffs, yet at this time of year the producer is called upon to make a decision as to future prices which will mean that the years work will show a profit or a loss.

There are several bad practices in regard to marketing our produce which have been in vogue in Utah for years. Chief among these is the system of contracting or selling months ahead of delivery. This is done with everything from wheat to wool and is one of the methods that has lost the producer much money during the last few years. The man who buys your produce months ahead of delivery is a speculator who is figuring on a raising market. These buyers are men who make it a business to keep well informed as to supply and demand and so are in touch with markets everywhere. Well equipped with definite knowledge as to the world conditions, these buyers meet the farmers at a great disadvantage. The farmer has not time to study markets in detail, nor can he keep in touch with the worlds production and demands, as well as the man who makes this his principal business. Each buyer is a specialist on one product and buys that only while the producer has many things to sell and naturally is not an expert in all of them. Armed then, with plenty of money and probably more information as to conditions, the buyer meets the farmer at a time when the latter needs money to tide over until harvest. It usually is an uneven proposition all around, and so has led to the building up of great fortunes by the men who could guess best, the contractors. These men, who really do very little of the work of the world, because of superior information out-guess the producer and so get the products for less than their real value.

Some examples might show the proposition more plainly. Two years ago Utah's wool crop was mostly contracted and it was figured that the sheep men lost about three cents per pound on all wool sold. The loss to Utah was about \$450,000.00. This year the wool was mostly sold under contract for from five to thirty cents less than it was worth at shearing time. The loss to Utah this year is between \$1,000,000.00 and \$2,000,000.00.

Lambs going to the feed lots were contracted early last fall at prices ranging from 9 to 11 cents per pound, but at the time of delivery these lambs were worth much more so the feeders of Utah lost from \$1.00 to \$2.00 per head.

A car of potatoes was shipped from one of our Utah towns containing consignments purchased from several farmers. One man received \$1.00 per hundred for his spuds, another \$2.34 per hundred. Which one do you think contracted early?

Some men last summer contracted wheat at \$1.00 per bushel, but the wiser ones sold theirs after threshing at from \$1.15 to \$2.00 per bushel.

Examples by the score could be given but would only weary the reader.

You will probably say that some-

times the seller gets the best of the contracting system. This is rare and if the advantage was not on the side of the contractor he would quit the business very soon. The fact that they are with us proves that they must make money. When you contemplate the large number of independent fortunes built up by the contractors in agricultural products, you will see that there is money made by buying ahead and waiting for the rise in prices. It is a time now when the farmer should be well informed so that he will know some thing of the tendencies of the markets, this he can do by watching reports in papers and magazines, the banker in the district will aid the producer materially if properly interested in the work. The banker can get information as to markets readily and so can be a big factor in changing the present conditions. More money for you as a customer of the bank, means more money for the bank to handle, and so both are benefited.

The bankers can assist the man who feels that he must contract, in order

Feed Carefully and Economically

By W. E. Carroll U. A. C.

During the present stress of food production and conservation it is more urgent than ever before that all waste in feeding livestock be eliminated. Any feeds needlessly wasted must be looked upon as so much loss of human food, which in the present crisis is nothing short of criminal.

In feeding livestock as in many operations, waste may occur where least expected. Some of the most flagrant and preventable losses occur in the harvesting and storing of feeds. All feeds should be cut clean and gathered completely from the land, and uncut corner or a small bunch of ungathered hay may seem small in itself, but they may in the aggregate amount to considerable feed. Harvesting hay or grain crops when too immature or too ripe or handling hay when too dry may result in much preventable loss and should all be avoided.

Proper care of pastures in the way of fertilization, cultivation, irrigation and drainage are all essential to their full carrying capacity and anything short of this is waste. In the storage

of feeds a great preventable loss occurs annually. This can be largely overcome by providing in advance adequate and convenient barn room, sheds, silos, granaries, and other necessary storage room. Care in stacking and storing feeds of all kind so as to prevent loss and deterioration are also essential.

Preventable Losses in Feeding

Losses in actual feeding operations may result from poor equipment for feeding. These can be prevented by building satisfactory feeding racks, bunks, and troughs. This equipment is not expensive, nor does a person have to be a skilled carpenter to build it. Visit your neighbors, get in touch with your county agent, write the Agricultural College or the Experiment Station, or do anything else to find feeding equipment which saves feed.

These visible losses are not so great nor are they so hard to prevent as the losses resulting from unbalanced rations or injudicious feeding.

A Good Ration

should be palatable. If the animals do not like it they will not eat enough to produce economically. should be adapted to the kind, age, and production of the animals being fed. Horses and hogs have relatively smaller stomachs than cattle and sheep and therefore cannot profitably take care of as much rough feeds. Young animals of all kinds call for somewhat different feeding and decidedly more attention.

should be balanced. That is, it should contain the right amounts of protein, carbohydrates, and fats, and the proper proportion between the hays and coarse feeds and the grains.

should be made up keeping in mind what effect it may have on the quality of the product. For example, milk cows should be kept off pastures containing wild garlic, or provisions taken to remove the garlic flavor from the milk. Too many potatoes fed to dairy cows result in a white salvery butter, which is not desired on the market. All feeds known to be detrimental to animal products should be avoided as much as possible or fed in limited amounts.

should be liberal. Only the feed above that needed to keep the animal body alive and in good working condition can be used by the animal for production. Suppose it takes 15 pounds of feed to keep up the body of the animal, and that the animal has the capacity to eat 30 pounds. Now, if only 20 pounds of feed are given per day 75 per cent goes to maintain the body and only 25 per cent for production. When fed to capacity (30 pounds) only 50 per cent of the feed would go to keep up the body and the other half would be used for production.

Feed Liberally but not Wastefully.

Finally, give the animals the best of care and attention. Remember the old adage, "The eye of the waster fattens his cattle."



THE MODERN DAIRY MAID

Modern machinery is doing its "bit" to help the labor problem.

to get some for immediate needs and money. Extending credit to the producer by the banker would often allow the farmer to hold his produce and thus get the advantage of the rise in prices. The last two factors depend upon a closer working co-operation between the banker and the farmer, and this condition is, I am sure, working out to the satisfaction of both parties.

Contractors are now out working buying lambs, cattle, hay, grain, potatoes and most any other product available. Be careful before you sell this year and try to save for yourself a just proportion of the true value of your products. Watch the market, consult your banker and your friends and remember the results of the last few years in this selling game. Try to be as well informed as the buyer and let us see if you can not do some

figuring yourselves and so keep more of the money your products finally bring in your own State.

SURROUNDED

A drunken man threw his arms around a telegraph pole, and then began to feel the pole with his hands. Round and round he went. Finally he gave it up and muttered: "No use. Walled in."

It is a good idea when the farmer is so situated that his hog house can be built into a bank or side hill with a southeastern or southern slope to take advantage of the natural topography of the land. This makes a hog house proof against cold winds in winter and insures dry yards and warmth, essential to health in young pigs.

DAIRYING

PLAN TO BUILD A SILO

By A. C. Baltzer.

The season to build a silo is here. Silos are to be found in every state of the union. Idaho has only a few hundred and it is our opinion that the stock farmer of Idaho could make no better investment than to have a silo. Three hundred thousand silos are filled and emptied annually in the United States. The owners of these silos exemplify the strict business methods for efficient farming so necessary in these days of war. "Why build a silo?" is a question no longer needing to be answered because the great number of silos in use is the most convincing proof of the value of them.

Farmers of Idaho, to economize and save your crops, plan to build a silo this summer and plant the crop to fill it before winter sets in. Why are bankers willing to make loans to build silos? They realize that a silo will increase the saving in the corn crop by 30 per cent, that it will increase the stock-carrying capacity of the farm 20 per cent, that it conserves the entire corn plant, that it provides a succulent, uniform and palatable feed for the entire year, and that it stimulates the milk flow of the cows. A silo is the cheapest and most efficient storehouse for feed on the farm. It will store eight tons of silage in the same space required for one ton of hay. Not alone on actual storage room, but chiefly on actual nutrients stored should the emphasis be placed. We find that a ton of clover hay contains about 1,000 pounds of digestible feeding nutrients. Eight tons of silage occupying the same amount of space has in it 2,000 pounds of nutrients, or just twice as much. Noting these facts, which would be the cheaper to build—a 100-ton silo or a 800-ton barn to store hay? A silo will pay for itself

in three years and has been known to do so in some instances in one year.

With high priced alfalfa and grains many farmers were caught unprepared during the past winter and spring to furnish feed to their stock. Those with silos suffered much less loss in production of milk, or beef, or mutton. Production is and should be the aim of all farmers in these days of war necessity. Increased production in all lines of stockraising is necessary, and in no manner can it be more easily and better solved than by using a silo. The silo will increase production, it will conserve feed, it will help solve the winter-feeding problem and give the greatest returns when market prices for butter-fat are highest.

The disastrous losses in production, and in many instances the selling of the stock that occurred last winter, should not occur again. Action to prevent such losses for the coming year should be adopted, for we need in particular every dairy cow, because dairy products will be more in demand than ever before. The meat supply will go to feed the nation's armies, hence the dairy products will find greater consumption at home.

The dairy department will gladly assist and advise anyone regarding silos and silage.

REPORT OF THE WELLSVILLE COW TESTING ASSOCIATION FOR JUNE 1917

LeRoy W. Hillam.

That June is the ideal month for dairying is proven beyond a doubt in the report of the Wellsville Cow Testing Association for the month of June. This completes ten months of work in the present year of running and is by far the best month that the Association has had taken from every point of view. During the thirty days of June 46 herds with a total of 410 cows averaged 838 lbs. of milk and 32.82 lbs. of butter fat per cow. This is practically one pound of fat per cow higher than last month's average and is a trifle better than ten pounds of fat per cow higher than the first month of running for the Association. Progress in better dairying seems to be the by-word with every member of the Association and due to this exceptional results are being obtained in practically every herd.

The leading cow for the month is "Roanie II," a grade Jersey owned by John Darley. She produced 1293 lbs. of milk with an average test of 5.5% making 71.1 lbs. of butter fat for the thirty days. John Stuart's grade holstein "Rosie," which lead the Association last month is second with a production of 1624 lbs. of milk testing 4.5% making 68.6 lbs. of fat. The third cow for the month and at the same time the highest milk producer during the period is "Wart" a Jersey-shorthorn cow owned by William Darley. She produced 1776 lbs. of milk testing 3.8% making 67.5 lbs. of fat. The highest herd average again goes to John Darley's 19 Jerseys whose average production for the thirty day period was 1172 lbs. of milk and 56.9 lbs. of fat. D. O. Nielson's 6 Holsteins are again second averaging 43.4 lbs. of butter fat per cow. John Stuart's mixed herd of 13 Holsteins and Jerseys is third with an average of 40.6 lbs. of butter fat per cow. Close to this and fourth place is Ray W. Hall's mixed herd of 12 cows averaging 40.2 lbs. of fat each.

Out of the 410 cows on test 103, or a trifle better than 25% of the cows gained the distinction of being placed on the "Honor Roll" each having produced over 40 lbs. of butter fat during the testing period. 123 cows produced over 1000 lbs. of milk for the month. 27 herds out of a possible 46 averaged better than 30 lbs. of butter

HOT WEATHER

the season when a

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SEPARATOR



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IT'S A GREAT MISTAKE for any dairy farmer without a separator or using an inferior machine to put off the purchase of a New De Laval Cream Separator in the summer months especially with butter-fat at the present unusually high price.

Great as are the advantages of the New De Laval over all other separators, as well as over any gravity setting system, at every season of the year, they are even greater during the mid-summer season than at any other time.

This is because hot weather conditions occasion greatest butter-fat losses with gravity setting and render it most difficult to maintain quality of product with any gravity system or unsanitary separator, while, moreover, the quantity of milk is usually greatest, and any loss in either quantity or quality of product means more.

Then there is the great saving in time and labor with the simple, easy running, easily cleaned, large capacity New De Laval machines over all other methods or separators, which naturally counts for more at this time of the year.

Hence the great mistake of putting off the purchase of a New De Laval Cream Separator in summer, whether you already have a poor machine or none at all, and every dairy farmer should keep in mind not only that a De Laval will pay for itself in a few months but may, if desired, be bought on such liberal terms as to actually save its own cost while being paid for.

Every claim thus made is subject to easy demonstration, and every De Laval local agent is glad of the opportunity to prove these claims to you, in your own dairy, without cost or obligation on your part.

Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for new catalog or any desired information.

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This bank with the capacity to handle business of large proportions, has a spirit of helpfulness for the small as well as the large depositor.



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SALT LAKE CITY

fat per cow. Four of these herds averaged over 40 lbs. of fat. 237 cows produced over 50 lbs. of butter fat for the month. The Association as a whole produced 343,391 lbs. of milk containing 13,458.6 lbs. of butter fat. This butter fat valued at 48c per lb. on the stand is equal to \$6,460.13 as the value of the product produced by the Association during the thirty day period or \$215.33 per day as returns for the product produced.

At present prices and with cheap

pastures practically any cow that is milking can pay for her feed but believing that high producing cows are conducive to higher averages and greater returns per \$1.00 expended for feed—six more "Boarders" or rather low producing cows were disposed of as beef.

Work on the silo at Hyrum has not started yet but the members have planted corn and intend to build as soon as work slackens up permitting them to do so.

FIRST TEN HERDS

Name	No. Cows	Breed	Fat
John Darley	19	Jersey	56.9
D. O. Nielson	6	Holstein	43.4
John Stuart	13	Hol. Jer.	40.6
Ray W. Hall	12	Mixed	40.2
Frank Wyatt	9	Holstein	38.9
William Darley	17	Jersey	38.1
Jos. R. Brown	4	Mixed	38.1
Jno. A. Leishman	15	Mixed	37.7
Geo. R. Perkins	8	Holstein	37.6
John L. Green	9	Jersey	37.3

SELECT DAIRY CATTLE BY SCALES AND BABCOCK TEST

Utah Agricultural College.

Milk is the cheapest article of food at the present time on the market. Housewives should thoroughly realize the value of it and introduce more into the meals. If we consider that one quart of milk is equal in food value to 8 eggs, one half pound of meat, two pounds of chicken, etc., it shows that enough is not being consumed. The average person in the United States drinks only one very small glass of milk per day when one quart should and can be economically used.

At least three times as much cheese should be consumed as is being eaten at the present time.

Careful tabulation of daily milk weights and occasional use of the Babcock test in the dairy herds of Utah should be carried on with greater interest than ever before. Cows can no longer be maintained in the herd unless the owner knows that they are making a profit. No cow whose pro-

duction is under 200 pounds fat per year can be maintained at a profit with the present price of feeds. No cow should be kept to help increase the great shortage in dairy products whose production does not equal or exceed 250 pounds of fat per year. There is absolutely no place for boarder cows and very little room for those that are barely making a profit. High production is always more economical than ordinary amounts so we should strive for the greatest economy during the time of such a vast shortage.

Feeding cheaper more palatable feeds to the cows is one of the best means whereby we can increase the production of the average cow. Eliminate the poor cows, then take better care of the good ones by giving them more feed of greater variety.

Don't half do it. Feed is high, so are hogs, but don't skimp in your feeding. To do so is false economy. Work your pork machines at capacity. Turn out every possible pound of pork.

Fruit Growers of The State Meet

About seventy-five fruitgrowers from different parts of the state met in Salt Lake City at the capitol and discussed some of the problems that must be met in order to successfully handle the big fruit crop.

President E. G. Peterson called the meeting to order and offered a number of suggestions that should be considered. Committees were appointed and recess taken. In the afternoon the reports were made and many suggestions offered.

A resolution was passed asking our congressional delegation to take up with proper officials and have fruit placed on the regular army rations.

Another resolution was passed asking the office of markets and rural organization of the United States department of agriculture to install a market news service in the state of Utah at an early date if possible, it being urged that market information on peaches, apples and potatoes is extremely desirable.

The railroad committee representing the local railroad reported as follows:

The conditions confronting you gentlemen today are the same that have been worrying us for some months. While you have the trouble of figuring where you are going to get your cans and jars from, we have been figuring where we could get equipment, locomotive power and labor to perform the service of transportation.

While it is a fact that this year there are probably more cars in service than before, yet it is also a fact that in our opinion the car situation will not be one bit better than in previous years. This for the reason that it will devolve upon the railroads to handle Uncle Sam's troops, munitions of war, impediments, and this will have to be given first consideration, which in brief means the using of equipment and locomotive power which would have been available in other years for the handling of your products.

The committee on canning and miscellaneous fruits reported:

We recommend that every canning factory in the state be requested to aid in conserving of the fruit crop by canning all of the surplus fruit possible.

We favor, under the present labor famine, efforts to secure help and to this end we favor exemption from school attendance of scholars who can be used in helping to save our perishable crops.

We favor a campaign of educative use of apples in the manufacture of mince-meat, cider vinegar, sweet cider, jellies, jams and apple butter, both by the housewives and our factories, and further that the purchase of the above products be made from the factories closest home.

We favor a campaign of education to encourage a more general consumption of fresh fruits in season by restaurants, hotels and families.

We favor a fair and reasonable price upon sugar during the preserving season.

The report of the committee on labor was as follows:

We recognize the following sources of labor which may be drawn upon to meet the shortage of labor in times of pressure:

(a) A considerable number of idle people, both sexes, between the ages of 18 years and 50 years; (b) a considerable number of idle boys and girls of school age—that is, under the age of 18 years; (c) a considerable number of students in the various high schools of the state, between the ages of 16 years and 20 years; (d) a considerable

number of men engaged in various types of industry who regularly take a vacation.

A survey would be made of these available sources of labor supply:

(a) A census of unemployed people between the ages of 18 years and 50 years should be taken by such means as the state council of defense may advise; (b) similarly, all unemployed people between the ages of 16 and 18 years; (c) the boys and girls above the age of 16 years, who are in regular attendance in school, can be utilized, providing the school authorities in their respective districts make such adaptation of the school calendar as may be best suited to the needs of the industries in the respective districts; (d) secure from the employers of labor in the various types of shop industries, department stores, etc., a census of their employees who will take a summer vacation and the dates upon which such vacation will be taken.

We recommend that the detail of handling this labor problem be operated through the farm labor office now conducted in connection with the state council of defense.

That the women's clubs, associated, parent-teacher organizations, etc., especially in the cities, be requested to assist in the organization of unemployed girls whose labor can be advantageously utilized in the food production industries.

That residents of the city be urged to go into the producing sections to secure and transport their own supply of products, thus relieving the producer of the necessity of transporting his product to the local market.

The fruitgrowers' committee submitted the following:

The conditions of the growing fruit crop, according to our best estimates throughout the state, are as follows:

Growers are very likely to be misled in the estimation of the size of this year's crop, as the drop is not yet over and is very heavy, owing to imperfect pollination of all varieties of fruit. The peach acreage is also considerably less than that of five or six years ago.

We estimate the fruit crop as compared to the crop of 1914, which was a bumper crop, as follows:

Strawberries, 50 per cent; peaches, 75; raspberries, 80; cherries, 50; apricots, 100; other small fruits, 75; Jonathan apples, 50; other apple varieties, 65; pears, 75; plums and prunes, 100.

We favor that the opening of the schools be delayed until the fruit crop has been harvested; also recommend that the state council of defense take up the matter of financing and the erection of evaporators, to care for all waste and surplus fruits, at convenient places.

We suggest that the matter of the extraction and preservation of fruit juice be taken up with the view of utilizing the Utah product in place of that of other states. Scarcity of packages was reported by that committee as follows:

We find a most critical condition existing in Utah today in regard to fruit shipping packages. An adequate supply of peach baskets is available, providing the growers are in a position to pay cash upon delivery. Peach crates are to be had on orders placed immediately, but owing to the exceedingly high price of pa-

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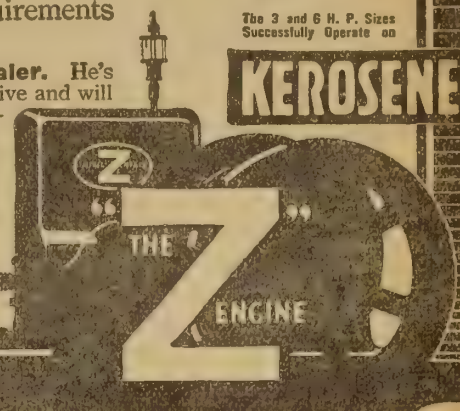
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per and labor, as well as lumber, very few peaches will be wrapped and packed in crates.

All mills are refusing orders for apple boxes at any price.

Prices in all shipping material are advancing almost daily, and we suggest that the state council of defense take immediate steps to ascertain the requirements of the fruitgrowers in the line of shipping materials and, if possible, provide some means of securing an adequate supply.

We further suggest that every fruitgrower who has not already secured his boxes or baskets ascertain at once where his supply is coming from and, if unable to secure them, report at once to J. Edward Taylor, assistant secretary of the state council of defense.

Shippers want central organization, their committee suggests:

That a message be sent to the congressional delegation of Utah at Washington requesting them to interview H. C. Hoover, with a view of having him deal in the purchasing of fruits for government use; that a central organization, to be organized later, consisting of the various shippers of the state, be organized.

That efforts be made in Wash-

ington to have fruits put on the preferential freight list.

That in view of the fact of boxes and box material being scarce and expensive, some arrangements be made whereby the small fruitgrower can be supplied with this material for the shipping of his fruit along lines similar to that employed in furnishing the farmer with seed for his planting.

That the shippers be helped by the labor committee in the supplying of labor for the loading of cars.

BE ON TIME

"Well, that's enough to try the patience of Job!" exclaimed the village minister, as he threw aside the local paper.

"Why, what's the matter, dear?" asked his wife.

"Last Sunday I preached from the text, 'Be ye, therefore, steadfast,'" answered the good man; "but the printer makes it read, 'Be ye there for breakfast.'"

"Well," asked the doctor, "how did you find yourself this morning?"

"Oh easy enough," answered the patient. "I just opened my eyes and here I was."



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portance to you and to us.

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cial Association, Agricultural College Extension De-
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Fruit Growers' Association.

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Do not sell your breeding stock. The price you
can get for them is high, but remember we must
keep the breeding stock or we will be in a seri-
ous condition. Livestock should be kept on every
farm.

A great many people will appreciate the work
of the farmer this year more than ever. We refer
to those who for the first time have made a gar-
den. They will learn that it takes work to keep
the weeds out and the ground well cultivated.

The exchange of labor is often very profitable
to both parties. Co-operation should be practical.
The exchange of farm machinery is also a good
thing when labor and help are so scarce. Don't
be afraid to offer an exchange with your neigh-
bor.

The "boarder cow" must go, be sure, however,
you make no mistake as to which is the best cow.
She may be a good looker but will she produce
the milk and butter. The only sure way to find
out is to test the milk and weigh it. Guessing
does not pay, as often we make mistakes.

CLEAN FIELDS

Only the man who really does the fighting of
weeds knows what it means to have a clean field.
Our best farmers fight the weeds early and keep
them down. You get much better results if you
work the weeds when they are small. One can
make a good guess as to the kind of a farmer he
is and the size of his harvest by how clean he
keeps his farm free from weeds.

STOCK SELLING AND PROMOTIONS

We still have with us the promotor and stock
seller who are ever willing to load onto any one
who will buy stocks, promising all kinds of re-
turns. It is a pretty good rule to follow that when
some one has "a good thing" and is willing to let
you in, you should investigate very carefully be-
fore you buy.

Any legitimate or safe proposition does not
need to go begging for money. There is plenty

of capital looking for investment. The trouble is
that these grafters get twenty to fifty percent for
selling the stock.

Our government authorities are going after
many of these concerns and we believe they
should keep up the good work.

FRUIT GROWERS GET TOGETHER.

If the suggestions that were offered at the meet-
ing of the fruit growers and allied interests are
followed up and carried out it will be a big help
in marketing and conserving our big fruit crop.

As to amount of fruit we will have this year
all did not agree. There is considerable dropping,
this may serve only as a thinning but if it con-
tinues it will materially reduce the crop.

All those interested, both the growers, shippers,
canners and railroads, must work together in
order to get best results.

With a shortage of labor we have one of the
largest fruit crops the state has had for some
time.

Co-operation, working together is the way to
do it.

MORE HOGS—MORE PORK

From every side you can hear the cry of
"raise more hogs," "produce more pork." Our
government is asking us to do it and point out
the profit to be made from having more hogs on
our farms.

Alfalfa grows better here than in any state and
it makes the best of pasture which is very im-
portant if we want to produce pork at a low cost.
A little grain along with good alfalfa pasture and
you can compete with any one in raising hogs
for the market.

Some of our farmers are selling their stock
hogs, a very unwise thing to do at this time.
Keep them and produce more pork. You can raise
them as cheap as the other fellow. Hogs under
normal conditions are "mortgage lifters." The
immediate future in the hog business is very
promising.

IMPORTANCE OF GOOD ROADS.

After a farmer produces a crop the next thing
is to market it. Good roads play an important
part in this part of the work. He may be but a
short distance from a good market if the road
will not permit of getting his crop there at
the right time he losses out. Good roads are no
longer a luxury, they are a necessity and parti-
cular is this true at the present time.

Our road officials may find it very poor economy
to curtail the building of good roads at this time.
Labor is short and material may be higher but
the lack of good road may cost us a great deal
more than it would to build and maintain them.
Good roads are going to play an important part
in the increasing of our crop production. Thou-
sands of acres are away from the railroads and
modern motor transportation will help build up
these undeveloped areas. It cannot, however, be
done without the aid of good roads.

SAVE YOUR SEED.

Now is a good time to do a little planning about
your seed for next year. Seed was hard to get
in many places and even scarce. Save your
own seed. Select it now. This can apply to
garden seed, flower seed, in fact seed of any kind.

Hill selecting of potatoes has proved very
profitable, and now, more than ever, you should
do it.

Some farmers do hand selecting of wheat and
other cereal seeds and it pays them big. The
importance of good seed cannot be over estimat-
ed. If you want better crops next year select or
arrange for your seed now. Your neighbor may
have some choice seed of a certain kind or
variety, secure some now, before the harvest
time. Like produces like. You do not get good
yield from poor seed. Good seed is worth more
than the poor kind and it pays to secure the
very best.

WHAT WILL MAKE US REALIZE.

The fact does not seem to come home to many
of our people that we are really at war. We
have been loyal in supplying our quota of men
for the front, generous in our buying of Liberty
Bonds and helping the red cross, but the neces-
sity of saving, of conservation does not seem to
come home to many.

We read of food riots, of starving people over
in Europe, we are so prosperous that we do not
seem to realize that the other half of the world
is in a serious need of food and the only way
they can get it is by the American people divid-
ing with them. This means we must practice
the greatest economy so we can let them have
food to eat. We must make some sacrifice to
help them. All this is true or why does our
government emphasize it so strong?

VALUE OF FARM MANURE

While visiting several farms during the past
week or two we notice on some of them great
piles of manure that should have been out on
the land. We doubt if those farmers really
know the value of farm manure. And it works
two ways, the lost of manure to the land in pro-
ducing larger crops and the nuisance it is around
the farm in breeding flies. If it had been put into
the soil it would have helped to produce better
crops, bring better returns for the labor of plant-
ing, cultivating, etc. Piled up in great heaps
near the barn it was a breeding place for flies
and anything but a pleasing sight.

Read the article giving details as to the value
of a load of barn yard manure.

In some communities manure brings a good
price and farmers will gladly pay for it and haul
it away. They have learned the value of fertiliz-
ing their land with barn yard manure.

HAVE ONLY ONE BREED.

The idea to have one breed in a section or
county and to stick to that breed is becoming
more popular each day. The spirit of co-oper-
ation can be practiced and better results will
come where any community will pull together
for one breed. That section soon becomes known
for that particular kind of livestock and people
go there to make their purchases. One neighbor
encourages the other and soon all those who live
in that section become interested and the re-
sults are more and better livestock. There are
many advantages of co-operation in such a neigh-
borly movement. In the selection of the breed
best fitted to any section care must be exercised
because you do not want to make changes. Get
the one best adapted to your locality and con-
ditions and then stick to it.

IMPORTANCE OF THE HOUSEWIFE

It would seem that the housewife is going to
play a very important part in the conservation
of our food supplies.

A government official made this statement,
"that one dollar out of every five that is spent
for food is thrown away in some American house-
holds. That the general average of waste in
the homes will be about 7½ percent of all food
purchased."

Were you to ask many of our housewives what
amount they wasted the answer would usual-
ly be "very little if any."

Read the article in this issue on this important
subject, and see if it will not offer some suggestion
as to where you can make a saving.

Conservation is one of the important problems
before the nation today. We must stop the waste
and make better use of our food supplies so that
we can help feed the people of the world.

Our supply is good, our crops are large, all
the more reason why we should save in order to
help feed others who are not blessed like we
are.

The housewife is one of the chief factors in
this great problem of the nation. Of course she
will do her part and do it well.

Live Stock

DON'T TAKE A CHANCE WITH SICK HOGS

"Don't take a chance with a sick hog. Act quickly. Call the county agricultural agent, a veterinarian or a trained man immediately. Don't wait a single hour when you suspect disease in your herd. Use the telephone. Only prompt action will stop hog cholera losses. Every hog saved will help win the war."

This is the message of tremendous importance the United States Department of Agriculture is carrying to farmers.

The time for argument about anti-hog cholera serum is past. Explicit figures are readily available which prove unmistakably that when administered in time by competent persons, hog cholera serum will keep well hogs from taking the disease for a period of three to six weeks. Not argument, but quick action is imperative to get serum and a trained operator to the farm to treat the hogs. Hogs will be saved and the nation's meat supply increased if every farmer will immediately upon sign of disease call in the nearest available expert to diagnose the complaint and administer whatever treatment is necessary.

The Department of Agriculture is urging that all state, county and local livestock interests, including state veterinarians, livestock boards, state college workers, county agents and local veterinarians, begin immediately

to organize anti-hog cholera preparedness campaigns to reach every farmer in every county. Such organization already exists in many places. Where it does not, there is need of special and immediate action before the hot weather conditions, favorable to hog cholera, come on.

Bankers and other business men can aid in the work of informing farmers where they can get expert help immediately when they suspect cholera in their herds. Lists of accredited persons competent to diagnose cholera and administer serum, together with their addresses and telephone numbers, should be furnished to each farmer in the county with the appeal that he call for help at once in case of need. Business men may also arrange through the local veterinary authorities or county agents to buy serum and hold it in reserve for emergency use at the nearest state serum plant, private plant, or serum depot. State and federal animal industry authorities should be notified of any outbreak at once by telegram.

Because a single outbreak of hog cholera on any farm is a matter of moment to the entire community, and because hog cholera infection is rapidly spread in many ways, farmers are urged to employ every possible measure to keep the disease out of their herds.

KEEP PIGS GROWING ALL

SUMMER ON PASTURE

Feed, Exercise, and Sanitation Are the Important Factors.

Keep the spring pigs growing all through the summer. It is the pig's business during this time to develop a good frame, to grow bone, muscle, and vital organs, and to lay on fat. Plenty of pasture, some grain, exercise, and good sanitary quarters are all necessary if the spring pig is to be thrifty and profitable.

Give the spring pigs plenty of good pasturage. They should be kept on pasture as long as possible and gain the benefit of its cheap nutrients, especially mineral and protein, and its tonic and digestive qualities. But pigs on pasturage alone, even alfalfa, need some grain supplement. The amount of grain or other concentrated feed used would depend on how much pasturage is available, on the cost factor of grain or other feeds, on the age and condition of the pigs, and the time at which the farmer expects to market them. To be ready for the early markets, spring pigs must be fed a heavier grain ration than pigs intended for the winter market.

Less protein supplement is needed when pigs are run on leguminous pastures. Under most farm conditions the pigs will gain well on a 1 to 2 per cent grain ration. The self-feeding methods makes for cheap and rapid gains. If the grain ration is limited, the hand-feeding method is better. By feeding once a day in the early evening, pigs take greater advantage of the pasture and graze hungrily during the cool of the morning or afternoon. Plenty of fresh, clean drinking water always should be available.

Pigs on pasture usually get enough exercise. They should have a clean dry, well-ventilated shelter to guard against exposure to storms, and to supply shade. A concrete wallow will add to the pigs' comfort, and a layer of oil on the water will keep down lice. Clean bedding also helps to keep away lice, as will an oiled sack on a rubbing post, or sprinkling the pigs with crude oil every two weeks.

To supply mineral matter and a tonic, the following mineral mixture is good. It always should be accessible. Dissolve the copperas in hot water and sprinkle over the mixture.

Copperas, 2 pounds.
Slaked lime, 4 pounds.
Wood ashes, 1 bushel.
Sulphur, 4 pounds.
Salt, 8 pounds.
Fine charcoal, 1 bushel.

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Wm. Warner, A. G. P. A., Salt Lake, Utah.

A TIP TO AUTO OWNERS

Automobile owners should allow as much cold air as possible to enter the carburetor nowadays. In the winter time it was necessary to draw the air around the exhaust pipe and also have the carburetor bowl heated. It is now economy either to allow cold air to enter the carburetor or to remove the carburetor heater. This will give the engine more power because the cool gas will cause a higher pressure in the cylinder when it is ignited.

AS EXPERIENCE TAUGHT HIM

Irate Father—Keep still, Willie; can't you see I'm trying to turn the motor over?

Willie—What for, dad? Are you going to spank it?

Lice are forerunners of disease. These parasites lower the natural resistance of the animal and leave him prey to disease germs. Crude oil in ovens, dipping tanks and cleanliness are lice eradicators.

HOME

FOOD WASTE AT HOME

Housewife the Chief Factor in the Conservation of the Nation's Food Supply—Helpful Suggestions.

One dollar out of every five that is spent for food is thrown away in some American households. In the majority it may be only one out of every ten or twelve, but in almost every home the waste is an important item in the cost of living. Investigators have estimated it as ranging from practically nothing to 20 per cent of the food purchased, with 7½ per cent as a mean value. Few housewives probably have any idea of what it amounts to in their own homes, but there are fewer still who could not reduce it if they would.

Ordinarily the process of wasting begins with the purchase of food. It is not uncommon, for example, for the housewife to want the butcher to trim off the fat and bones which were nevertheless included when the meat was weighed and for which he has charged his customer. Since these have to be paid for, the economical housewife will see that they are taken home and used. The bones should go into the soup pot and the fat can be utilized for cooking and thus made to reduce the amount of fat which must be purchased specially for that purpose and which in many households is a considerable item in the year's food bill.

Another cause of wasteful buying is the erroneous idea that the value of foods as food is in some way determined by the price. As a matter of

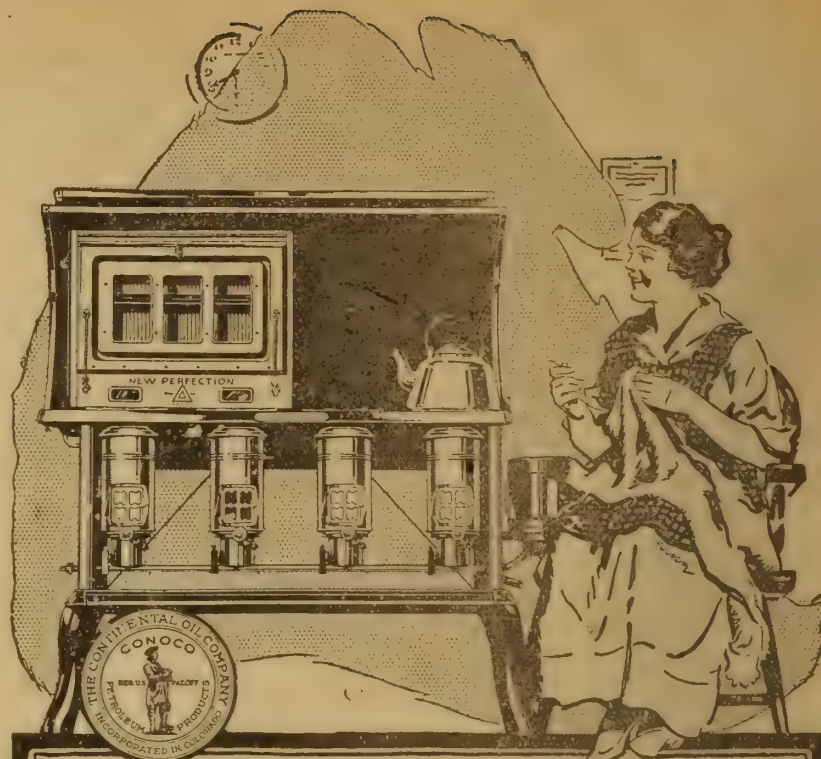
fact, the nutritive value of an article of food and its price seldom have any relation to each other. An expensive cut of beef is not necessarily any more sustaining than a cheap one. It usually tastes better, or can be cooked by easier methods. To buy it deliberately for these qualities does not necessarily mean waste of money, but if one is looking for nutriment, not flavor or convenience, the purchase of the expensive cut is often unwarranted extravagance. Care in cooking and seasoning moreover, will make inexpensive meats attractive and much better than costly ones poorly prepared.

With fruits and vegetables the price is often determined by the season. A vegetable out of season is much more expensive than in season, but it is no more nutritious. In order to purchase to best advantage, the housewife should understand such things and should also be familiar with general market conditions. If she can choose between going to market in person and ordering by telephone or at the door, she should know whether in her particular circumstances the convenience of the latter makes up for the possibly better prices and quality to be obtained by the former method. She should, further, know whether the saving often effected by buying in bulk is likely to be offset or not by spoilage and waste in the home. If she has no adequate storage facilities it may often be wiser to buy in small quantities. Furthermore, when this is done, there is no doubt that there is less temptation to be unduly lavish with the article in question.

Once the food is in the house, it is important that all that is edible be eaten. The peeling of potatoes, for example, seems a small thing, but it has been estimated that 20 per cent of the flesh of the potato is often lost in the process. Not only are many other vegetables and fruits wastefully pared, but in many cases the tops or outer leaves are thrown away, although they could be used as greens, to flavor soups, and in other ways.

One of the articles of food with which the waste is greatest is bread. In almost every household quantities of this are "left over" every day. Frequently they are put into the garbage pail; more rarely they are made into bread pudding or a few are used in scalloped dishes or in similar ways. It is not generally known, however, that dried bread can be ground in a coffee mill or food chopper and used in place of part or all of the flour called for in gingerbread, and cookies, pancakes, and biscuits, or in thickening soups, sauces, etc. This fact has long been familiar to commercial bakers and there is no reason why the housewife should not practice the same economy that they do.

One great difficulty is that too many American housewives consider the details of real economy beneath them. It has not been the American practice to scrimp. It is not uncommon in Europe, for instance, to count out the lumps of sugar that are to be used at the breakfast table—so many cups of coffee, so many lumps of sugar. Such a practice would seem to many of us intolerably niggardly, but there is no reason for going to the other extreme by putting on the table or on the individual plate more than will be eaten. The food that is left on the plate is a total loss, and even that which is left on the platter is often thrown away though it can be made to appear again in as attractive a form if the housekeeper knows how to use it. Poor cookery means waste for if food does not appeal to the palate, in all probability it will not be eaten; and in that case it is a total loss. This is also true of food that has suffered from bad seasoning. To oversalt or burn a dish may be as wasteful as to throw it into the garbage pail.



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S.P.5

The serving of excessively large helpings usually springs from a mistaken idea of generosity. As a matter of fact, however, a great many of us probably often eat more than we need or really want rather than leave food on our plates. And it is always possible by giving another helping to satisfy anyone who is really hungry without forcing on the others more than they care for. This does not mean that it is good economy for the housewife to supply her family with less than it actually needs. That would be a sign of very poor management or else of desperation.

Just how much food the human body really does need is a complicated problem to which in recent years scientists have been devoting much attention. Food is the source from which the body derives both its energy, or fuel, and the substances it uses to build and replace its worn-out tissues. It also provides small amounts of recently discovered substances needed to regulate growth and other bodily functions. As a unit for measuring the energy supplied, scientists have adopted what is known as the calorie, and it is estimated that for a full-grown man engaged in moderate physical work 3,000 calories a day are needed. Of these from 300 to 400 should be supplied in the form of protein, the chief substance utilized by the body in tissue building. There should also be some fruits and vegetables which supply mineral matters needed for building tissues and help in various ways to keep the body machinery in good working order; also fat and starches and sugars which are valuable sources of energy. The energy supplied by the foods as a whole is consumed by the body in running itself and performing its daily work.

The number of calories and the amounts of nutrients contained in stated quantities of different kinds of food have been worked out by scientists and afford a basis for comparing the nutritive value of various dishes. The matter is so complicated that the ordinary housewife probably has neither the time nor the inclination to

make a mathematical calculation of the nourishment her meals afford. It will, however, help her to know that by observing a few fundamental principles she can alter her bills of fare to suit changing conditions at home or in the market without any risk of underfeeding the family. First among these is the fact that an adequate diet should contain articles from each of the five groups into which the common food materials may be divided.

These are: (1) Vegetables and fruits, which supply acids and other substances that the body needs to keep it in proper working order, as well as some building materials and energy; (2) meats, fish, eggs, milk, legumes, etc., in which the proportion of protein to other substances is high in comparison with the other groups; (3) starchy foods like potatoes, rice, flour, and other grain products, etc., which furnish much energy and some protein and mineral matters; (4) foods rich in sugar, an excellent source of body fuel, the pleasant flavor of which makes the diet more attractive; and (5) the fats, like butter, bacon, cream, lard, etc., which are valuable sources of energy.

No one of these groups can profitably be omitted altogether. It is nevertheless possible to avoid from a nutritive point of view a useless waste of money by selecting, first, the cheapest articles in each group; and second, by substituting to a certain extent articles from a cheaper group for those from a more expensive. In particular the grain foods in group 3 may be used more extensively than is common in many households, and the use of the higher-priced ones in group 2 may be correspondingly decreased. The grains furnish protein as well as energy, and in a cheaper form than meat. By combining them with a little meat the meat flavor is secured and a dish as nutritive but much less expensive than meat alone obtained. This does not mean that all animal foods or even all meats should be cut out of the diet entirely. As far as can be judged, in the light of our present knowledge, the body is most likely to keep in health if it obtains its protein

from a variety of sources, including milk (especially in the case of children), eggs, meat, etc. Similarly, dried fruits contain not only the characteristic properties of foods in group 1, but sugar as well, and a liberal use of them will provide in an economical form much of the sugar which the palate craves.

The housewife, too, who understands these and similar facts in regard to the composition and uses of food will be able to free herself from many existing prejudices. Skim milk, for instance, is regarded by many persons as unfit for human use. As a matter of fact, it contains practically all of the constituents of whole milk except the fat taken off in the cream. On farms it is frequently fed to live stock, but in many cases it might be more economical to use it in the household. If it is considered too thin for drinking, it may be used in cooking, as in making soups, mixing bread, or cooking cereals.

These are merely suggestions. A hundred others will occur to the woman who really wants to plan her meals efficiently. Waste means the failure to make full use of everything that is bought or raised. To avoid it takes skill and knowledge and in most cases time and trouble as well. Cheap foods and "left overs" can not be made attractive as easily and as quickly as high-priced supplies fresh from the dealer. This is one reason why some foods are cheap. The more the housewife can rely on her own skill and labor to make her meals nutritious and attractive, the less money she will have to give for expensive materials and help.

HOW TO USE THE LEFT-OVERS.

Some suggestions by the United States Department of Agriculture on how to practice thrift and economy in the preparation of our meals.

Meat Pie.

Here is an appetizing way to use that meat left from yesterday's roast.

Cut meat into fairly small pieces. Stew in saucepan with a little water, left-over gravy or soup, salt to taste, and such seasoning vegetables as onions and celery, if desired. Thicken liquid with flour. Line baking dish with biscuit dough, pour in the meat filling, cover with biscuit dough and bake in a medium oven.

If the quantity of meat is small, a little macaroni or diced potato may be added.

Such pies to be at their best must be well seasoned.

Nourishing Milk Gravy.

What are you going to do with that half bottle of left-over milk in your refrigerator?

The cream has been taken off but there is good food value in what is left.

(Enough for family of two adults and three children. Reduce proportions if for smaller number.)

1 pint skim milk.
1/4 cup flour.
2 level teaspoons butter or cooking fat.

1/2 teaspoon salt.
Melt butter or other fat in saucepan. Add flour and salt mixed. Blend. Add milk gradually. Heat, stirring constantly until thick.

Flavor, if desired, with any left-over minced meat or fish which may be on hand, or minced ham or a slice of broiled bacon, crumbled.

Serve on boiled hominy, samp, rice, potatoes, macaroni, or slices of corn or other bread, or toast.

Breakfast Rusk.

Don't throw away stale bread.

It can be used in many ways in preparing your family's meals.

Dry or slightly toast slices of bread and ends of loaves on the back of a stove or in a slow oven. Crush with rolling pin and serve the fragments with milk or cream and sugar, and fruit, if desired, as a breakfast food.

This product closely resembles some commercially prepared breakfast foods and is obviously less expensive.

An Economical Way to Peel Potatoes.

A large amount of good food in potatoes including most of the valuable mineral elements, is wasted by ordinary methods of peeling. Baking "in the jackets" also means a loss (if the jacket is not eaten) since much the meat of the potatoes sticks to the stiffened skin and is discarded.

Drop washed potatoes in a vessel of rapidly boiling water and allow them to remain 10 minutes. Remove and strip the thin skin as when potatoes are peeled after thorough cooking by boiling. The potatoes will still be practically raw and may be handled like raw peeled potatoes in preparing any dish, as scalloped, French or German fried potatoes, potato chips, etc.

One excellent way to cook the skinned potatoes is to bake them. The entire potato, including the thin, golden brown crust may be eaten.

Left-over Grease.

Do you throw away "ham gravy" or bacon fat, because it is too greasy for ordinary use?

Here is a way to make it blend into soups or gravies instead of floating as a greasy layer on top.

Stir into each two tablespoons of melted grease one-half tablespoon of flour. The mixture will blend easily into milk soups, stock soups, sauces or gravies and give an appetizing flavor.

Scalloped Cereal and Meat.

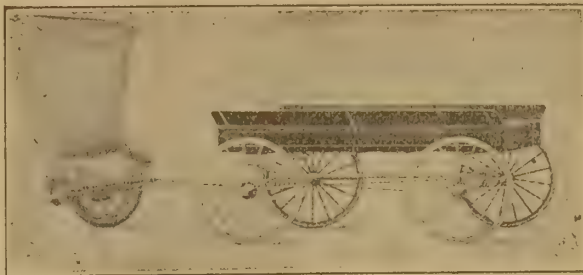
Have you left-over cereal mush from breakfast, and meat left from yesterday's dinner?

Combine them, and make an appetizing luncheon or supper dish.

Place alternate layers of cold cereal (cut or mashed into fragments,) and minced left-over meat in a baking dish. Make the top layer of minced meat and bread crumbs. If the mixture is too dry, pour over it enough milk to moisten. Place in medium oven until heated through and browned a little on top.

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An Emerson Auto Trailer doubles the usefulness of any farmer's automobile.

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And it saves your pleasure car—keeps it from getting all scratched up and old before its time.

Come in and see our large stock of Auto Trailers, ready for immediate delivery. We have them in several different styles, of different capacities and at different prices. There is a style here to fit your car and your requirements.

Miller-Cahoon Co.

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THE FARMER'S WORKSHOP

By C. H. Wheatley.

The farmer who has always been without a workshop, a convenient place to keep all of his tools, does not know the great advantage nor the amount of time that such a place will save him. It is a great advantage because he can always find a tool when it is needed, and it is a saving of both time and money because the owner can often do repair jobs for himself that would otherwise have to be taken to a blacksmith or repair shop.

The farm shop can be located in a separate building or occupy a room in the barn or a handy shed. If possible it should be large enough to run a wagon or the larger implements in so that they can be worked on conveniently at any season of the year. The shop should be well lighted, as it is possible to do the best work only when there is plenty of light to see from all sides whatever is being repaired. An other essential to a good shop is that it be dry and well protected from the weather, for it is only when the tools are kept dry that they will not rust or lose their usefulness. Have a place in the shop for each of the tools and keep each tool in its proper place when not in use.

The workshop has another great value for it is of much assistance in keeping the boys at home. It is usually an easy matter to interest the boys in making things with tools and when they once get started along this line they will seldom have a desire to loaf around the store on days when the weather will not permit working in the field. There are many things in the way of pieces of furniture, useful tools and contrivances for use in and about the house and barn, etc., that can be made without a great deal of skill. Boys can often make money by selling the products of their workshop, such as tables, book shelves, single and double trees, handles for garden tools, etc. Some of the state experiment stations have issued bulletins giving directions for making some of these things.

From whatever angle you look at it

it seems that money properly invested in a workshop and its equipment is money well spent.

NOT A PRESERVATIVE

There is no corn meal and water preservative for vegetables. A report to this effect recently published, and credited to the United States Department of Agriculture, probably originated from the fact that a mixture of corn meal and water had been used by a department specialist to start the lactic-acid ferment in cull potatoes put up for feed in the form of silage. This starter has been used in the case of vegetables fermented for food but it is not the preserving ferment, the specialists explain; it only starts this ferment. It is not recommended for household use, however. The same purpose is better served, as recently announced in connection with the fermentation process of preserving vegetables for food, by the addition of a small amount of vinegar which keeps injurious bacteria down while the natural lactic-acid ferment starts.

LATE WAR NEWS

An editor in the far west dropped into church for the first time in many years. The minister was in the very heart of the sermon. The editor listened for a while, and then rushed to his office.

"What are you fellows doing? How about the news from the seat of war?"

"What news?"

"Why, all this about the Egyptian army being drowned in the Red Sea. The minister up at the church knows all about it, and you have not a word of it in our latest. Bustle around, you fellows, and get out an extra special edition."

WISHING FATHER WELL

"Father, I had a fight with Percy Raymond today," confessed the son. "I know you did," replied the father soberly. "Mr. Raymond came to see me about it."

"Well," remarked the boy, "I hope you came out as well as I did."

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Small investment; easy terms. Make machine pay for itself in a few weeks work.

There is a big demand for wells to water stock and for irrigation. Write for free illustrated circulars showing different styles.

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Lasts all season. Made of metal, can't spill or tip over; will not scorch or injure anything. Guaranteed effective. Ask for

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Sold by dealers, or 6 sent by express, prepaid, \$1.00.

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Irrigation and Agricultural Preparedness

By O. W. Israelsen, In Charge of Irrigation and Drainage, Utah Agricultural College.

The world war into which we have recently been thrown has developed problems in connection with the production of food of stupendous significance. That the burden of producing food for our allied nations now rests in large measure with our own country is generally recognized. Consequently each state in our union is keenly awake to the fact that it must not only produce the amount of food which it ordinarily produces for its own people but that it must also draw very heavily upon its reserve soil fertility in order to be able to supply its own needs and also contribute in abundance to the needs of other nations.

Under present circumstances agricultural conditions which ordinarily pass the public eye unnoticed are vividly brought to the fore ground. Particularly is this true of the one basic phase of Utah agriculture—the economic use of our water supply. And this use includes not only the use of streams, lakes and underground reservoirs, but likewise of our natural precipitation. To the careful student of western agriculture two somewhat distinct phases of waste have long been apparent in the use of our water supply. These types of waste are:

1. Loss of the water itself.
2. Waste of fertility of the soil.

To the use of natural rainfall for crop production only the first type of loss applies. Intelligent farmers today are beginning to realize fully that they cannot afford to lose any appreciable quantity of natural rainfall, but that, on the other hand, it is the highest type of economy to conserve the largest possible portion of rainfall for the production of crops.

In connection with the use of our natural waters from streams, lakes and our underground reservoirs, in irrigation however, we have associated the two distinct types of loss above outlined and here the loss of water is far less serious than the resulting loss of soil fertility and will therefore be given but very little attention. At the present time, Utah is irrigating just a little over 1,000,000 acres of land and yet many persons say that Utah irrigators frequently suffer from a shortage in water supply, and yet according to recent authoritative estimates the annual quantity of water used by irrigators in Utah varies from 4 to 10 acre-feet per acre per year, which means an average quantity of about 7 acre-feet per acre annually. One cannot ignore the fact that greater prosperity in Utah and greater productivity in soil is therefore dependent on a more economic use of this extremely valuable resource—irrigation water. It is a striking thing to realize and is in fact difficult to fully realize that in only sixty years of agricultural practice there have been wasted in Utah nearly 300,000 acres of land due to the extensive application of irrigation water and seepage losses from various canals. The loss to the State which has resulted from this type of irrigation practice, may be viewed from three somewhat different aspects.

1. What will it cost to reclaim these lands?
2. What annual interest loss does the State sustain through nonproductiveness of these valuable lands?
3. What additional food supply might Utah have produced this year in response to the demand for greater production of food in case these lands had not been rendered non-productive? Let us analyze briefly these various questions.

1. Estimating that it will cost an average of \$20.00 per acre to reclaim the water-logged land, the total expenditure for the State will amount to \$6,000,000 which is nearly one-half of the total amount of money expended

for irrigation works in Utah down to the year 1910, at which time \$14,000,000 had been expended. It is not argued that it is under all conditions possible to prevent the need for drainage of irrigated lands by careful irrigation but yet it is fully believed that much of the need for drainage might have been economically prevented by proper irrigation. On the other hand it is not desired to imply that Utah cannot afford to reclaim its water-logged lands. In fact the reverse is true. Utah can ill afford to allow its water-logged lands to remain non-productive. This fact is rather clearly brought out by analysis of the second point mentioned, namely the annual interest now being lost on the investment of the land once productive.

2. Placing the very conservative estimate of \$100.00 per acre as the market value of these water-logged lands before they were so water-logged above their present value note that the 300,000 acres has decreased about \$30,000,000 in market value. At an interest rate of 5 per cent per annum, this investment of \$30,000,000 would

bring \$1,500,000 interest annually, which means that in only four years time the saving of interest on the investment would pay the capital cost of reclamation, consequently one cannot do otherwise than urge the decided importance to the State of stimulating an early reclamation of these water-logged lands. Stupendous as these figures are they are relative unimportant when compared to the third factor, our present deficiency in power of food production which has resulted from the waste of these lands. This point is discussed below.

3. Consider the amount of wheat which might be produced on these lands in case they were now productive. It was recently the pleasure of the writer to obtain estimates of various farmers throughout the State as to the amount of wheat which might be produced on the best irrigated lands, typical of those which have now been rendered non-productive by seepage and over irrigation. The average of these estimates is about 40 bushels per acre which is believed to be conservative. On this basis, our power of wheat production for the present year is just 12,000,000 bushels short. In other words, had we not rendered these lands non-productive we should produce 12,000,000 bushels of wheat more than we possibly can under present conditions.

Now let us ask this question; how long could the people of Utah be fed

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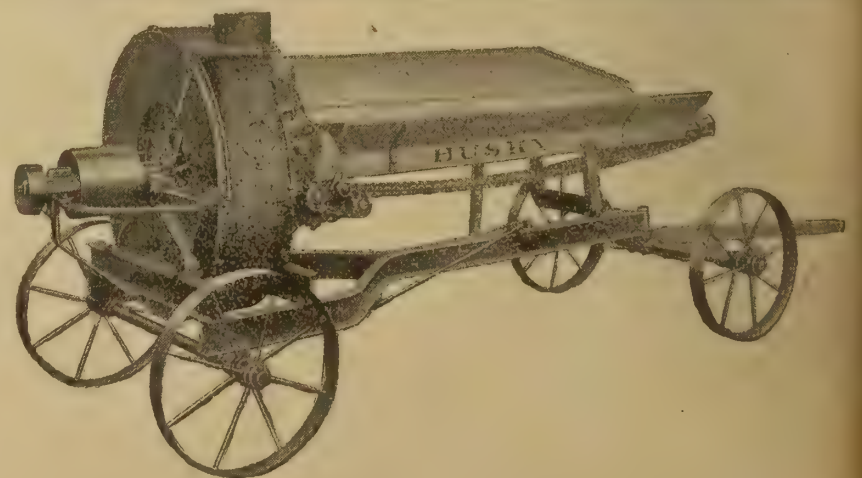
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Salt Lake City

on this crop of wheat, or in other words, how many States like Utah could be fed on this amount of wheat for one year? Statistics indicate that the percapita consumption of wheat throughout the country is between 5 and 6 bushels, consequently we may for average figures estimate that each person in Utah consumes annually 5 bushels of wheat. Since there are about 400,000 people in our State this means that we consume each year approximately 2,000,000 bushels of wheat. Upon this basis the wheat which might have been produced on the lands which we have water-logged in 60 years would have provided bread for our people during a period of 6 years or this year would have furnished wheat for 6 states the size of Utah. Likewise examine the question from the point of view of potato production and consumption. Estimating 300 bushels of potatoes per acre per

year on our best lowlying land, a yield which has been confirmed by a great many farmers, we should this year produce had we conserved our 300,000 acres of water-logged land 90,000,000 bushels of potatoes more than we can possibly produce under present conditions. Allowing 5 bushels of potatoes per capita consumption annually, that is 5 bushels for each individual we consume 2,000,000 bushels of potatoes annually, therefore, the decrease in our productive power due to our having water-logged 300,000 acres of land is equivalent to a crop sufficiently large to furnish our present population potatoes during the next 45 years, or in other words to feed 45 States of Utah for one year. It is fully realized that these figures are so large as to arouse suspicion despite the fact that the estimates are believed to be conservative. But if the quantities be cut in two and again cut in half, our decrease productive power of wheat would still be sufficient to furnish wheat for our state one and one-half years and of potatoes enough for our state over 10 years. The results are still of very striking importance. We should not conclude, however, that these conditions are necessarily incident to our irrigation practice. They are rather due to the abuse of irrigation privileges and may be in large measure prevented on an economic basis. These conditions should stimulate in ever resident of Utah and in every person who lives in the arid West having to deal with irrigation practice, a very keen appreciation of the fact that under irrigation practice special care is necessary, special information of paramount importance, liberal consideration of ones neighbors rights highly essential and rapid progress in practical methods as well as in State laws governing the use of Irrigation Water an absolute necessity for the maintenance of agricultural preparedness and the ultimate perpetuation of Western civilization.

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YANKEE Axle Grease

has a graphite base, which takes it out of the class of ordinary axle greases. It's prepared especially for use in this intermountain country. Buy a can and use it.

Utah Oil Refining Co.
SALT LAKE CITY, UTAH

SOME MISTAKES MADE IN IRRIGATING SUGAR BEETS (Continued from page 2)

When this center of the crown is distressed, it often happens that the beet will start a new ring of growth around the outer part of the crown and new leaves will spring from that new growth. This forms a sort of cup center. Moisture accumulates in that center and decay will sometimes entirely destroy the beet.

A little carelessness in furrowing out causes very large tonnage losses. Watch the shovels and adjust them for different types of soil in the field. Until the leaves get so large that they interfere with cultivation, run the cultivator after each irrigation else on heavy soils, the furrow will soon bake and cracks will allow moisture to escape at a terrific rate.

DO YOUR BEETS NEED WATER? Mark Austin.

I notice some of the beets need moisture and if possible should not be allowed to suffer. When the beet plant suffers for want of water to any great extent it seems to encourage the blite.

Careful attention given your beets now pays well at the harvest time.

Beet land that was not plowed this spring should be given a little deeper cultivation, as it would naturally dry out quicker than fall plowed land.

Cultivation is the important thing now. It pays in dollars and cents at harvest time. If you can't do it hire some one and make money by doing it. You will get a better crop of beets with less water. Tonnage is what makes the amount of the check and good cultivation makes the tonnage.

CHEAPER FEED FOR THE COW By Chester C. Farr.

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WM. WARNER, A. G. P. A., Salt Lake Route,
10 East Third South, Salt Lake City.

little, dairymen should consider the use of fall sown soiling crops for the coming spring.

Why not work that potato field, or make the corn land help? It may be that you are expecting to have a root crop for this year which can be stored early and in time to plant the land to a green crop.

Two bushels of rye, oats or wheat and vetch seeded on the potato, corn or root crop land with the first fall rains or any time from then until the middle of November will produce a valuable soiling crop for spring feeding, just when the ensilage gives out. The aftermath will furnish a good pasture or make a good green manure to plow under.

Moisture conditions should be good for best results. You will have to

judge from your type of soil as to which crop, oats, rye or wheat, with vetch or peas, will give best results.

The green feed will keep your cows up in milk and condition just at the time when they need it most, and will save you many dollars that would otherwise be spent for hay.

Give this some thought in planting your crops for the year, and talk it over with your county agent.

The greater per cent of the weight of the pig is water, hence, in order to keep his system going, he needs lots of water—pure water and he wants it frequently, especially in warm weather. Don't let your pigs suffer from thirst during hot days. See that they have good, clean, pure water before them at all times.

LIVE STOCK

THE ADVANTAGES AND DIS- ADVANTAGES OF YOUNG AND OLD BULLS

E. G. Woodard.

Most men prefer to buy a young bull rather than an old one. However, both old and young have their advantages and disadvantages. The chief advantages of buying a young bull are as follows:

1. A young bull is easy to handle and he can be trained according to the method used by the purchaser.
2. The cost of transporting is small.
3. A young bull can usually be bought cheaper than one ready for service or mature.

4. There is less chance of buying disease with a young bull than there is with a bull that has been in service.
5. A young bull can be fed so as to develop up to the limit of his ability.

6. If a bull is bought young and proves to be especially valuable, he has a long period of usefulness before him.

The chief disadvantages of buying a young bull are:

1. A young bull is untried and the buyer must wait about three years after he is old enough for service before his merit can be known.
2. If a bull calf is bought one cannot be sure how he will develop. Some very nice looking calves develop into ungainly animals.

The chief advantages of buying an old bull are:

1. It is possible to get a proven sire.
2. When an old bull is purchased his mature conformation is known.

The chief disadvantages of buying an old bull are:

1. An old bull is very likely to be vicious and hard to handle.
2. There is more chance of buying disease with a mature bull that has been in service for a number of years than in buying a young bull that has not been used.
3. If an old bull is to be shipped, the charges will amount to considerably more than those on a young bull.
4. An old bull may not last long.

Although all of the factors mentioned may have some influence with the purchaser of a bull, still the fact remains that what is most wanted in a herd sire is the ability to improve the productivity of the herd and this ability can be detected with certainty in the tried bull. On the other hand, a person can never be sure of this ability in a young bull until he has been tried. The advantages are certainly in favor of the mature bull if he can be purchased at anything like a reasonable price.

These associations have been very successful so far. There are a number of them in the United States. They are, and should be, an important factor in the improvement of our dairy and livestock cattle.

CO-OPERATIVE BULL ASSOCIATIONS

The co-operation bull association is especially adapted to herds which are so small that a valuable bull for each herd would be too heavy an investment to be justified by the extent of the business. Through co-operation, cattle owners are enabled to obtain the benefits which come from the use of a pure-bred sire at an expense which is no greater, and in many cases is even less, than the cost of maintaining a scrub.

"Better and fewer bulls" is a phrase which represents the aim of these associations. A typical organization is composed of from fifteen to thirty farmers who own jointly five bulls. The territory of the association is divided into five breeding blocks and one bull assigned to each block. To prevent inbreeding, each bull is moved to the next block every two years. Barring losses from death or other causes, therefore, no new bulls need be purchased for ten years. It is customary to apportion the purchase price, and the expense of supporting the bulls, among the members according to the number of cows owned by each.

These associations have been known in the United States only since 1908, when the first one was organized in Michigan. The short time which has elapsed since then makes it impossible to demonstrate the full value of the associations, because the influence of a pure-bred sire is felt in the herd for more than one generation. Similar associations, however, have existed in Denmark ever since 1874, and the movement in that country has proved most successful. So far as we know now, there seems to be no serious objection to organizations of this character to offset their very obvious advantages. Instead of spreading abortion, tuberculosis and other diseases, as has been sometimes alleged, they seem to aid in the control of contagion. One association, for example, refused to permit one of its members to use the bulls until he had consented to dispose of all his cattle, which reacted to the tuberculin test.

This same association is composed of sixteen farmers and is organized into five blocks. Before the association was formed, eight farmers, who afterwards became members, had each an average investment of \$85 in a scrub bull. These scrubs were sold and five pure-bred bulls were bought at \$240 each, or an average of \$75 for each member. This actual saving in cash, however, is a far less important matter than the fact that the members now are able to use pure-bred sires instead of the former scrubs. A larger membership, it is said, would reduce the expense still further. In another association, which

SELECT LOW SET, BLOCKY, EARLY MATURING BEEF CATTLE

Utah Agricultural College.

The prevailing price of beef makes the cattle industry more enticing than ever before. The demand is great because the supply is very low. Never in history have the packers been so anxious to get hold of good fat cattle of any kind as they are today.


The past year Utah has witnessed a great set-back in its number of beef cattle. Hundreds have died because of the hard winter and poor feed. The ambition of every farmer should be to increase his herd by maintaining all the females to use for breeding purposes.

Feed is high priced and the demand is urgent, so proper selection of beef cattle is more important than ever before. We cannot afford to own the long-legged, cat-hammed, slow maturing steer during such periods. Animals that are low set, blocky, thickly covered, and with the instinct of early maturity, are the ones that should be selected and fed during the next few years.

Run more females on the range. This can be done by practicing better

feeding methods with the young animals, thus getting the steers ready for market one year younger. With this method a cow takes the place of a steer on the range.

Feeding roots, silage and hay should be extensively practised with the calves during the first winter. Turn them out to grass at yearlings feeling fine and lively so that when fall comes they will weigh 800 pounds instead of 500 or 600 pounds. Cattle going on to grass thin and lifeless make very little gain for several weeks. By the time the starved animals gets to feeling good and ready to gain the feed dries up, hence the above size is not reached until he is about 2½ to 3 years of age.



FRICITION


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has more than 100 members, the original cost to each for purchasing the pure-bred sires was only \$23.

In regard to the returns from grading up cattle through the use of the pure-bred bulls of the co-operative associations, one estimate obtained from farmers in Maryland, Michigan and Minnesota, places the increased value of the offspring in the first generation at from 30 to 80 per cent, or an average of 65 per cent. Such large profits are commonly associated by business men with the possibility of equally serious loss, but in the bull associations this does not seem to be true. It is difficult to see that any probability of loss exists. It is true that some associations have disbanded, but there is no case in which any member actually lost on his investment.

HELP REDUCE THE LOSSES IN LIVESTOCK

In our mountain states thousands of dollars are lost each year, that could be prevented if better sanitation and good feeding methods were followed by some of our livestock men.

Proper feeding and sanitation are two important preventives of disease losses in farm animals. If carefully applied these measures may prevent many losses of meat animals. Keep the animals sturdy and disease-resistant by feeding a good, wholesome diet. Young animals need particular care and should be kept growing. A balanced ration should be fed—one that contains enough digestible protein to supply the needs of bone and muscle growth.

The farmer should carefully consider the food requirements of his animals, as has been shown by the State experiment stations, in standard farm-animal books, and by the United States Department of Agriculture. Green feeds have a tonic as well as nutritive value and should be used wherever possible. With some feeds care must be used in feeding to avoid parasitical infection and the infection of such diseases as tuberculosis. Old pastures and milk used as a feed are examples of possible sources of disease to sheep and hogs, respectively. Pure water is another essential to animal health. Animals should not have access to water which may be contaminated, such as streams passing through infested farms above, pools drained from barn lots, and so on.

Two naturally hygienic factors are fresh air and sunlight. Pure fresh air constantly available to an animal reduces the possibility of lung trouble. Impure air reduces an animal's resistance to disease by failing to supply the oxygen necessary for the purification of the blood. Sunlight is a natural germicide and will keep animal surroundings free from disease germs. All buildings for housing farm animals should be well ventilated and have plenty of sunlight reaching to all parts of the building at some time during the day. When weather permits, the animals should be kept outside as much as possible. Yards, lots, pens, and buildings should be kept clean, and may be made free of disease by the use of lime and standard disinfectants. Whitewashing the inside of buildings, scattering lime over the ground and floor, and spraying with disinfectants those places accessible to animals but inaccessible to sun-

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Eastern Agent

light will aid sanitation and promote the welfare of the farmer.

RAISE MORE HOGS

Utah Agricultural College.

In times of promised food scarcity the slogan, "Raise More Hogs" is a wise and at the same time may be a dangerous one. It is wise because the hog is a very economical producer of human food, being surpassed in this regard only by the dairy cow. The point of danger comes when so many hogs are produced that they actually become a menace to the human food supply.

This may sound somewhat strange, but a moments thought will show how this may occur. Hogs of necessity

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must be fed fairly concentrated feeds. This in many places means grain of one kind or another which could be used for human food, such as wheat, corn, or even barley. On the other hand if a small amount of these valuable grains can be used in connection with a large amount of waste products and rough feeds in the production of pork, then a real saving has been affected.

The advantages of raising hogs are many. They multiply rapidly and it takes but a short time to get into the business. Comparatively little capital is tied up and that which is invested is turned over rapidly, as hogs can be marketed when less than a year old. Probably the most attractive feature of the hog business is that it is profitable. Even under normal conditions hogs are paying property, and the prospects in the immediate future are doubly promising.

Hogs fit well into most systems of farming, and should be made a part of practically all farms. They are safer as a side line than as a main business. More hogs can be grown with profit and safety on most Utah farms. They should, however, be made to produce most of their growth on waste products, pasture and cheap roughage. Most farms have more skim milk and buttermilk than can be used on the place as human food. These make excellent hog feeds. Table scraps should also be completely used in this way. Bran, shorts, and mill screenings are by-products that are not well adapted for human food, and no class of animals will make more gain in weight on these feeds than will the hog.

Tankage is a by-product of the slaughter house which is now available to many Utah farmers at reasonable prices. It is a very concentrated feed and one high in protein. For that reason it must be fed with care. It is fed to best advantage with corn, barley and other feeds of low protein content. Young weeds from garden and field can also be converted into pork.

Pasture offers a splendid opportunity for the production of cheap pork. Any kind of pasture can be used, but alfalfa has proved the best. Clover is a close second while the grass pastures are not nearly so good. Grass pastures are better utilized by dairy cows. A small allowance of the more concentrated feeds is necessary for best utilization of the pasture. Two or three pounds per day for each 100 pounds of live hog will be found sufficient. Where feed barley is available this can well be a mixture of about equal parts of barley and shorts. Screenings alone (ground) or screenings and shorts can be used. Bran is rather bulky to be fed with pasture. This is also true of skim milk, though where this by-product is available at cheap prices considerable pork can be made on skim milk and pasture. Some grain will be needed however, for fattening. During the winter a good grade of fine alfalfa hay can be used to replace the pasture.

Remember, hogs are economical producers of human food, but they must be made to do it on cheap feeds and by-products.

CHOOSING THE MALE

Prof F. S. Minckler.

Great care should be exercised in choosing the herd boar. He is easily the most important animal in the herd, and upon his ability to perpetuate the desired qualities depends the profit or loss of the business. Prepotency is fundamentally important; that is, the breeding male must possess the ability to establish in his progeny the essential desirable qualities that make up his own individuality. He should be masculine, resolute and vigorous. He must possess those meat-making qualities desired in his pigs, for like begets like. He should be purebred and registered, and a representative of the same breed as the sows with which he is to be mated. Exercise is of prime importance in his management, as instances are numerous where breeding males have been ab-

solutely ruined by close confinement and heavy feeding. The practical herdsman knows that small, weak litters are the result of inactivity on the part of male previous to the mating and breeding season. If possible, he should have outdoor exercise every day, preferably in an open yard adjacent to the brood sows. This practice will make possible prompt detection of the sows as they come into use. Certainly the herd boar should not be permitted to run with the brood sows and mate with them repeatedly and indiscriminately, or his vitality will be taxed and the pigs will show evidence of such abuse. Coarse headed, heavy shouldered narrow backed males with long coarse legs, shallow bodies and slim hams should never be retained for service. The pigs produced by such mating will show similar habits of growth and undesirable conformation, and certainly prove disappointing to the caretaker. A pig factory should be instituted. It is a pity to retire from service a breeding male who has demonstrated his usefulness as a sire, clearly shown his prepotency as a breeder, and established an individuality in his pigs that anyone can detect, simply because it is more convenient to dispose of him at the end of the breeding season and engage the services of a young boar for the next mating season. The crime of the breeding industry in this country is the failure to use the tried sire in constructive breeding operations.

THE SILO WILL HELP PRODUCTION

By H. W. Mumford.

I recall that twenty years ago enthusiastic advocates of the silo not infrequently made extravagant claims concerning the value of silage. There was then, as there is now, abundant reason for enthusiasm. Enthusiasm backed by incontrovertible facts is, however, quite different from enthusiasm supported only by the opinion of an individual here and there. As the years have passed, abundant proof has been massed to forever remove the silo from the experimental class. It is no longer a question of whether or not the silo is a good thing, but a question of how best to use it and combine the silage with other feeds to produce maximum results on the one hand or the most economic results on the other. There still remain many farms upon which livestock is kept where there is no silo.

Much can be claimed for the silo as a cheap source of feed for all classes of livestock, but in my judgment, the silo is primarily valuable to the cattle-raiser. It was the use of corn silage as a food for dairy cows that first brought it into prominence. This was a natural consequence: First, because of the fact that dairy farming lends itself to an intensive system of agriculture; and second, succulence as a factor in the economic production of milk is an exceedingly important consideration. Beef cattle production in the United States has gradually been more and more adapted to a more intensive system. In this gradual evolution of beef cattle production, the silo is becoming well-nigh indispensable.

It is noticeable that it is the farmer who complains most about the labor and expense of filling the silo. Farmers in other states who have been accustomed to shock and husk their corn and subsequently haul the corn stover, have no difficulty in appreciating that so far as the labor proposition is concerned, the silo is a labor-saver, to say nothing of the convenience of its use in winter.

Substitute for Grass

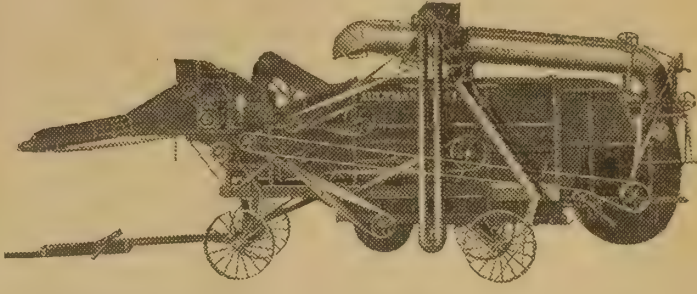
From our English cousins we learned the value of succulent feed in the ration of cattle and sheep. Because of different labor conditions in this country, the growing of roots has not proved so profitable or popular as in England. A search for a substitute for roots resulted in the general

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OUR BIG FREE CATALOGUE TELLS YOU ALL ABOUT ITS CONSTRUCTION, or better still, we have a New Century in stock at our Branch in Salt Lake City. Go there, look it over, see it in operation. Then, and then only, will you appreciate what real separator value is.

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adoption of corn silage as the cheapest succulent feed available. With the increasing value of land in the United States, and the apparent necessity of keeping a larger percentage of the land in crops, roughage, including all kinds of hay, have rapidly increased in value until their profitable use to any large extent in the rations of beef and dairy cattle has been a serious question. Here again is where corn silage comes to the front as the cheapest roughage available. It is now generally known that the most profitable use of silage is not where it is used to the exclusion of supplementary feeds, but it is probably true that no other American feedstuff can as safely constitute so large a proportion of the ration of cattle as corn silage.

The silo makes possible a larger livestock production on a given acreage. Take one specific example: Experiments which have been carried on for several years at this station show it requires at the least 1½ acres blue grass pasture to maintain a cow and nursing calf during the pasture season. In comparison with this system, 1½ acres corn will, in a normal year, produce fifteen tons silage, which will furnish two cows with forty pounds of silage daily per head for an entire year. This amount of silage, supplemented by one pound of cottonseed meal daily per head, is equal to blue grass pasture in food nutrients, and is sufficient to maintain a cow and calf in thrifty condition. By following this method of keeping cattle, a distinct saving of land can be made and a larger acreage can be devoted to the intensive cultivation of grain crops.

It has been so frequently pointed out that the corn plant is the best adapted to silaging that it needs but passing mention here. It is important to remember in considering the possibilities of the silo that something more than one-third of the food nutrients of the total corn plant is to be found in the stalks and leaves. I leave it for the farmer to

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decide what percentage of this one-third is now profitably employed in the production of livestock, where the silo is not used for purposes of preservation and storage.

AN EVEN TRADE

An Irishman who had walked a long distance, feeling very thirsty and seeing a milkman, asked the price of a quart of milk.

"Ten cents," replied the milkman. "Then give me a quart in pints," said Pat.

Pat, on drinking one pint, asked: "How do we stand?"

The milkman replied, "I owe yer a pint."

"And I owe you one," said Pat, "so we are quits."

BABY BEEVES POPULAR

The demand for small, high quality cuts of meat and the increased cost of producing beef have combined to foster the rapid growth of the baby beef industry. Baby beefs may be animals, weighing from 900 to 1,200 pounds and marketed when between fourteen and twenty months old. It takes less food to produce a pound of flesh with them than with mature cattle, they sell as high as the best of other fat cattle and markets for baby beefs have been very stable during the last ten years. The young heifers sell as well as the steers, and the returns from the money invested in the production of such cattle come quicker. On the other hand, it takes more experience to succeed with baby beefs than with mature cattle, a better grade of stock is required, and farm roughage cannot be substituted for grain to the same extent.

The first necessity for the production of baby beef is a herd that has at least a fair amount of beef blood. The cows need not be pure-breds, but they should have at least two or three crosses of such blood in them. A preponderance of dairy blood will not give profitable results. The cows should, however, produce enough milk to keep the calves well and growing without much additional feed.

A good bull will do much to offset defects in the cow herd. A good beef form and a strong tendency toward earliness of maturity are essentials; the owner's success, in fact, depends to a great extent upon the bull's ability to transmit the latter characteristic to his offspring. Money spent in acquiring a bull that will do this is likely to prove a good investment, for the whole baby beef industry depends upon speed in finishing the animals for market.

A herd at least large enough to produce a carload of calves a year is recommended. Shipping in carload lots is usually the only economical way of getting stock to market, from twenty to twenty-seven baby beefs constituting a carload. Some allowance must, of course, be made for loss and for calves that are not suited for treatment as baby beef. Since a well-matured bull can easily take care of fifty or sixty cows, the bull charge per calf also will be greater when the breeding herd is small. On the other hand, great care must be taken not to crowd the pastures. Good bluegrass or clover should carry from fifty to one hundred cows on a hundred acres, other pastures from fifty to as low as five. The amount of available roughage is another important factor in determining the size of the breeding herd. Roughage should form the basal portion of the ration for the cows. It cannot be bought with profit at the prevailing prices and no more cows should be kept, therefore, than the farmer can feed with home-grown roughage.

The feeding of the calves intended for market depends on a number of factors, such as the season of the year they are born in, whether or not any other use is made of the mother's milk before weaning, and the age at which it is planned to sell the beefs. Suggestive rations in which these points are considered are given in the bulletin already mentioned. These are made up of corn, cottonseed meal, corn silage, clover hay and oat straw. If barley, milo, kafir, or similar grains are substituted for corn, somewhat larger quantities should be used. Linseed meal may be used instead of cottonseed meal, and if neither of these is available, a high-grade leguminous hay should be used for roughage.

Weekly Weather-Crop Summary for Utah for the week ending Tuesday, July 3, 1917.

Three weeks have now elapsed without rain, no showers having been reported anywhere in the State since June 11th. Crops in general, however, are holding up well under the drought, with the exception of spring grains, which in many localities are

wilting and much in need of moisture. All irrigated crops made good progress during the week. Barley, oats, and some winter wheat are now heading, and rye intended for hay is being cut. Pastures and ranges are still good, but would be improved by rain. Reports from Boxelder, Sanpete, and Millard counties indicate that the alfalfa weevil is developing rapidly, since the beginning of warm weather, and is doing noticeable damage in some fields. The "June drop" of fruits was quite heavy, but good crops are still indicated, especially of apples. Cherries are ripening and beginning to appear in the markets.—J. Cecil Alter, Meteorologist.

SOME HAZARDS IN HANDLING GASOLINE

By H. J. Wilson,
Colorado Agricultural College.

In connection with investigations regarding safety and efficiency in the use of petroleum and its products, the bureau of mines has made numerous tests of gasoline. In Technical Paper No. 127, by G. A. Burrell, are stated the hazards that may result from handling these liquids and the precautions to be observed.

Gasoline vapor mingles with the air in the same manner that water vapor does, the amount carried depending upon the temperature of the air and the readiness with which the vapor can be obtained. If one takes the cover off a full pail of tightly enclosed gasoline and applies a match to the surface, the gasoline will flare up and burn as long as the gasoline lasts. On the other hand, if one puts a few drops of gasoline in a small tightly enclosed pail, waits a few minutes and then produces a flame or electric spark, a violent explosion will likely result.

In the first case the vapor burns as fast as it comes from the gasoline and mixes with the oxygen of the air, whereas in the second case the oil vaporizes in the pail and mixes uniformly with the air to form an explosive mixture and upon ignition explodes.

One gallon of gasoline when entirely vaporized produces about thirty-two cubic feet of vapor. If a lighted match could be applied to pure gasoline vapor in the absence of air, no fire or explosion would result. At ordinary temperatures air will hold from 5 to 28 per cent of gasoline vapor, depending upon the grade of gasoline. In 100 parts by volume of air and gasoline, an explosion would not take place if there were more than six parts of gasoline, or less than 1.4 parts. In other words, the explosive range is between 1.4 and 6 per cent of vapor. One gallon of gasoline can, under ideal conditions, render 2,100 cubic feet of an explosive mixture.

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Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful berry, also the grand prize contest.

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Wanted to hear from owner of good farm for sale. State cash price, full description. D. F. Bush, Minneapolis, Minn.

BUY A FARM FROM A FARMER

Millard county has as good water rights as southern Idaho. It has a better climate. The soil is very productive. Capital is building the largest sugar factory in Utah. This means that prices are going up. There are some fine bargains down here. You can't lose on them. I know the best that is to be had. I have farmed here for 25 years and will be pleased to give you the result of my experience.

NELS L. PETERSON,
Deseret, Utah.

to the farmers. Representative M. H. Welling, House Office Building, Washington D. C. has written us asking us to help him put these books in the hands of those who are interested. He also suggests that many bulletins are available and he will be pleased to send them to our readers.

Send your name and address to Representative Welling, at above address and get one of the year books, and ask for bulletins along the line of work you are interested in.

RELIABLE FARM BARGAINS.

We have secured the agency for the famous KILLPATRICK ranch, situated in the Woodrider valley, near the town of Picabo, Idaho. This is one of the finest ranches there is in the state of Idaho. All under a high state of cultivation, first-class primary water right, good buildings, good improvements, on the railroad and county road, near good schools and every condition for a home. Property is being sold and we are running a big excursion on July 14th. The big sale will be held on July 17. No land will be sold until July 17, at which time "First Come, First Served." It will pay you to get in touch with us and go on this excursion. Ask your agent for particulars about rates. Price of this land is \$70 per acre, \$20 per acre down, two years without another payment, allowing you two crops after the first payment, eight years on the balance at 6 per cent interest. This is an opportunity of a lifetime to secure a first-class farm on easy terms. Go with us and see the crops that are growing on this ground and you will be convinced. There will be a discount on this land to those buying on the sale date. No discounts after.

We have in the Bear River valley some beautiful farms for sale, ranging in price from \$115 to \$200 per acre. This land is right near a first-class town and railroad, school, electric lights, city water and other improvements that it takes to make a home. Climatic conditions are first class. This land can be rented for \$20 per acre per year cash. If you are looking for a first-class farm in this locality, we can suit you as to price, terms, location. Ten years to pay, 6 per cent interest.

In Cache valley we have some beautiful land. A number of weeks ago we made a big purchase in Cache valley and still have about one-half of this land left. Some of the best farmers in Utah have bought part of this land. We can sell you a farm, planted to alfalfa, which will cut this year from four to six tons per acre. Also some planted to grain. Right under the canal, water piped to the premises for domestic purposes. On the railroad, near school, good community; nice place to live and every condition to make a home on a farm. Can sell this property for 10 per cent down, ten years on the balance, at 7 per cent interest.

In southern Idaho we have 40, 80 and 160-acre tracts right near the town of Downey which we are selling on easy payments. This is some of the best land in southern Idaho. We can suit you as to price, terms and location. A few choice pieces at \$50 per acre, including ample water right.

On 14th South we have some one-acre tracts for sale at \$450 per acre. This is some of the best garden land in the valley. On the 5c car line. Can sell on easy terms. Small payment down and long time on the balance.

KIMBALL & RICHARDS,
"Land Merchants,"
52-54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.

FREE FARM LANDS

The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah

POULTRY

FOWLS FOR EXHIBITION

Preparing Show Birds—Good Physical Condition, Handsome Plumage, and Careful Grooming Essential.

Every fowl, whether young or mature, should be in first-class show condition when it enters the exhibition hall. The plumage should be the standard length for the breed, lustrous and plentiful, the head bright red in color, and the comb developed to the required size. The specimen should appear in handsome dress, good physical condition, and trained to exhibit his good qualities to advantage. Careful training imparts to a bird sufficient confidence to assume and hold desired poses under showroom conditions.

If possible, obtain exhibition coops similar to those used at the show you will attend. Cover the floor with short straw or a mixture of bran and straw for feathered-leg breeds. Two months before the show place the birds you intend to exhibit in the coops at night. Visit the coops as frequently as you can and handle the birds often. Carry them around under the arm, open their wings and examine the undercolor, and accustom them to every movement of the judge. It is not advisable or necessary to keep the show birds confined in the training coops. A day at a time is sufficient. Then, allow them the run of the house for two or three days and outdoor exercise if seasonable.

It is necessary to examine show birds carefully at least 10 weeks before the show. Remove all imperfect feathers, in the hope that they will be replaced by feathers of standard color. Frequently a colored feather showing a little white along the edge of the web will molt out perfectly when the fowl is well fed on sour-milk mash, meat, and grain. Never pluck a new feather—one in which the quill is filled with fluid—as it will invariably return partially white. A few days before the exhibition examine your birds again and pluck the imperfect feathers. It is quite a problem to determine the best procedure when there is foreign color in some of the large feathers on the wings or tail. If the color is a cause for disqualification, there is no justification for shipping the bird to the show. What is best to do will depend upon the quality of the specimen in other sections and upon the amount of defective color in the wings. Usually these defects occur in similar feathers in both wings.

All white fowls must be washed, and most fowls of other colors can be improved in appearance by washing, fluffing, and grooming before the show. For white birds have three tubs filled with (1) warm, soft or rain water; (2) warm, soft or rain water; (3) warm, soft, or rain water colored the proper shade to rinse and blue white goods. Use a bar of good white or castile soap and a large sponge and a nail brush. Have the temperature of the room 80 degrees or 85 degrees and bring the birds in clean exhibition coops, the floors of which should be covered with fresh dry shavings. Wash the males first. Clean the shanks and feet with the nail brush, soap, and water. Insert the bird in tub (1) and push it down under the water several times until the plumage is wet through; make a heavy lather with the sponge and soap, and thoroughly wash the plumage with the sponge; open the wings and sponge them in the direction of the feathers. (In fact, always wash the length of the feather, from the quill to the tip and not across it.) Keep the bird's head out of the soapy water if possible; sponge the soap off the bird, and remove to tub (2). Press it under the water several times, allow it to stand and drip for a few seconds, and then dip it twice in tub (3) containing

the bluing water. Remove the bird from the water, hold its legs firmly and raise it up and down quickly, so that it will flap and expand its wings and tail and shake out the water. Do not use a towel to dry a white bird.

Move the exhibition coop near the fire or some heat, so that the bird will dry. Lifting up the plumage of the breast and opening the feathers of the fluff while drying has a tendency to increase the apparent size of these sections. It is necessary to examine the white birds frequently if the coops are near a stove to guard against overheating them or scorching or curling their feathers.

The shanks and feet of exhibition fowls must be absolutely clean and well polished. To overcome rough scales rub the legs twice daily with a cloth dipped in kerosene, and a short time before the show wash them thoroughly. Use a good scouring soap, woolen cloth, and warm rain water. Remove any old or rough scales and also the dirt between the scales. The latter can be taken out with toothpicks. Dry the shanks and apply a solution of equal parts of sweet oil and alcohol. Then warm a woolen cloth and scrape a little beeswax on it. The warmth will melt the wax, and the shanks should then be polished with the waxed cloth.

Before shipping the birds to the exhibition apply the sweet oil and alcohol solution to the face and comb. If you are showing white birds, fill their plumage, after washing and when thoroughly dry, with equal parts of bran and rice flour. Some exhibitors use cornstarch, which is equally satisfactory. This prevents the plumage becoming soiled, and when the starch is shaken out at the show and the fowls are groomed they apparently take a higher polish. However, the coops must have wooden or muslin tops and sides to prevent rain coming in contact with the starched plumage. The final grooming is accomplished with a silk handkerchief, rubbing and polishing the feathers until the plumage has a high luster.

WHITE LEGHORN CHICKENS

For egg production purposes, the white leghorn hens lay decidedly the best, declare Utah Agricultural college authorities, in a bulletin just issued by the Utah Experiment Station. According to this bulletin, prepared by E. D. Ball, Byron Alder and A. D. Egbert and known as Bulletin No. 148, breeding for egg production, the average production of the white leghorn is decidedly above the average of the general purpose breeds. The conclusions presented in this bulletin are based on eight years' experimental work. The average life of the white leghorn appears to be about six years, says the bulletin. During this period the average total production of hens in the college flocks being used for these experiments was 500 eggs. The maximum possible production for the six years was found to be above 1,000 eggs. Other interesting conclusions drawn are as follows:

"The production of unselected white leghorns varies widely in different years as influenced by the environment, but from all available records averages about 130 for the first year, 120 for the second and less than 110 for the third, drops to about 75 in the fourth and falls about ten eggs a year after this up to the eighth year. Selected flocks have averaged 160 in America and 190 in Australia. The American record corresponds closely to the average of the upper one-half of the unselected flocks and indicates that the selection has been able to eliminate the lower half.

"The first year production of a flock of white leghorns is no indication

of their total production, if the first years is high the second will be low, if the first is low the second will be high, but the total production in three years will in all cases be about the same.

"If the first year record of a flock is high, selection of the high layers will materially improve the later production of the flock. If the first record is low there will be little value in selection as even the lowest producer will make a second year record above the general average. The three-year average is in all cases a much more reliable indication of productivity."

This bulletin will be sent free upon application to the Experiment Station, Utah Agricultural college, Logan, Utah.

EXPERIENCE WITH GEESSE

By M. A. Herold.

Geese may not bring the prices in other sections that they bring here, but our local prices are excellent. And the cost of raising them is not high. The eggs bring from 10 to 15 cents each. That is the common goose egg. The egg of the pure-bred geese bring 25 cents apiece. Geese are easily sold here at prices ranging from 20 to 25 cents a pound, the price depending on the season and the age. Young geese naturally bring better prices, although when geese are scarce—in the winter—old geese sell very well.

Grass is the natural food of both old and young and is also an important factor in making a cheap increase in weight. Give breeders free range over a good pasture, and feed grain for the best results. Goslings grow rapidly if given an unrestricted range of good grass. If free range cannot be furnished movable yards should be built and moved frequently. Close watch should be kept and the yard moved just as soon as the grass gets short. This occurs in an amazingly short time, as goslings eat large quantities of grass.

Goose Feed

Lettuce is cheaply grown and a green food they are fond of, but extreme care is necessary in feeding it. If fed from the very first it is perfectly safe, but there is danger of killing the goslings if a large quantity is fed when they are unaccustomed to it. Rape is also relished and easily raised, making cheap gains in goose flesh. The mash consists of one part bran (by measure) to two parts cornmeal, moistened and fed as a crumbly mash.

Drinking water is supplied, but a pond is not necessary to raise goslings. In fact, especial care is taken to keep goslings out of the pond until they feather. Equal care is observed in getting them under cover during a storm.

The profit depends on the kind of goose that is raised. Common geese weigh ten to thirteen pounds. The goslings weigh from eight to ten pounds. The profit on one of these is from 60 cents to \$1. Pure-breds weigh from 15 to 20 pounds, and goslings from 13 to 15 pounds apiece. It costs about 10 cents a pound to raise them.

Raising goslings is also ideal for farm women, as usually plenty of pasture is available; and a plentiful supply of pasture means small feed bills. The less feed to buy the greater the profit. The outlay need not be large, as the breeders can be sheltered in a cheap building. While it is cheaper to start with mongrels, they also bring smaller returns. Even if the initial outlay is greater it pays to start right; that is with pure-breds. However, if it be impossible to start with the pure-bred, do the best you can. Any sort of a beginning is preferable to none at all. So make a start, however small, and expend some of the first profit in the purchase of pure-breds. You will never regret that expenditure. Besides the difference in returns, when selling goslings by weight, is the difference in the price received for the eggs.

Farmers' Market Place

DUROC BRED SOWS

We are offering a few choice fall gilts, sired by the Grand Champion Richards Defender, and bred to our new giant herd boar, Richards Pathfinder. We purchased Richards Pathfinder in Iowa last December and he is the largest boar of his age we have ever seen. These good gilts will farrow during August and we are pricing them low, as we need the room.

We guarantee to please you or will refund your money and pay the express charges both ways.

RICHARDS LIVE STOCK CO.

Virginia, Idaho

"Home of the Champion Durocs."

FOR SALE

Eight registered Jersey cows.
Three registered Jersey bulls.
Nine registered Jersey heifers.
Nine pure-bred Jersey cows.

FRANK M. DRIGGS, Ogden, Utah.
Phone 108 Ogden, or 8-J Huntsville, Ut.

WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers.....	\$.90
200 Butter Wrappers.....	1.25
500 Butter Wrappers.....	2.00
1,000 Butter Wrappers.....	3.00

Check or money order must accompany order.

And breeders also can be sold at an advance over the price of market geese.

The automobilists are good advertisers for me. The motorists have talked about these geese, their size, etc., and have sent people from towns quite far away to get eggs. As the demand for eggs is big, the geese are not allowed to hatch until the end of the season. They are kept laying and fed beef scrap to force the production of eggs.

My personal experience is that geese are comparatively easy to raise and cost less for feed than any other poultry.

POULTRY NOTES

If you set hens, be sure to give them clean nests and keep them clean. The nests and the hens, too, may very well be dusted with good insect powder.

In order to keep the system toned up, it is best to feed some green food, such as refuse heads of cabbage, turnips or alfalfa and clover leaves steeped a few hours.

Plenty of grit and oyster shell should be before the hens all of the time. Remember, the snow makes their usual supply of these necessities inaccessible in the winter.

Experiments have proved that a hen in good condition will eat, on an average, three ounces of mash in the morning, two ounces of grain at noon and four ounces of grain at night.

Give charcoal to your fowls. It has a tendency to keep them in health. Corn on the cob, thoroughly scorched, will furnish charcoal in as good a form as there is. Feed it freely. No harm can come from it.

Take care of the hen manure for in it you have one of the most valuable plant fertilizers known, if it is judiciously applied. Its value offsets a much larger portion of the cost of grain fed than most people think.

Depleted farm fertility in America will be restored through systematic livestock farming.

How to Make Cider Vinegar

The season will soon be here for making cider and vinegar, and we hope that many of our readers will devote their culls to this purpose rather than to dump them on the market.

Here is a good receipt for making cider or vinegar:

"Only ripe apples should be used, possessing a sugar content of not less than 8.5 per cent. Most varieties of apples commonly available possess the requisite amount of sugar when ripe, but not when green. The apples should not be decayed or over-ripe, because the amount of sugar is lessened in such apples. The apples should be clean when gathered, and if not so, they should be made clean by washing. The objection to dirt in the apple juice is the danger of introducing forms of fermentation that will interfere with the normal alcoholic and acetic fermentations which are desired. One objection raised to washing apples is the liability to remove the germs that cause the desired forms of fermentation. While in our own practice we have not met with such difficulty, it is preferable that the apples shall, if possible, be clean when gathered.

Grinding and Pressing

"In the grinding and pressing of the apples, care should be taken to observe ordinary precautions of cleanliness. In many cases, it is the practice to add water to the apple pomace after pressing, let it stand a while, and press again. This treatment yields an additional amount of juice, which, however, does not contain the requisite amount of sugar to make good vinegar, provided the first pressing has been efficient. Avoid the use of juice made from a second pressing.

"When practicable, it is a good plan to store the freshly pressed apple juice in some large receptacle and allow it to stand a few days before putting it into barrels. In this way, considerable solid matter held in suspension will settle before the liquid is placed in casks. The casks used should be well cleaned, thoroughly treated with live steam or boiling water, and they should not be over two-thirds or three-fourths filled with apple juice. The bung should be left out, but a loose plug of cotton may be placed in the hole to decrease evaporation and prevent dirt from falling in. The bung should be left out until 4.5 to 5 per cent of acetic acid has formed.

"When the freshly pressed apple juice is at once placed in ordinary cellars, where the temperature during winter does not go below 45 to 50 degrees Fahrenheit, the alcoholic fermentation is complete in about six months, assuming that the work is begun in October or November, though 80 to 90 per cent of the alcohol is formed in half this time or less. By having the fermentation take place at a temperature of 65 to 70 degrees, the time can be considerably reduced; however, if it is not desirable to have the alcoholic fermentation take place at much above 70 degrees, since the loss of alcohol by evaporation is increased. By the addition of yeast to the fresh apple juice, the fermentation can be completed in three months or less, especially if the temperature is near 65 to 70 degrees. It is suggested that one cake of compressed yeast, or its equivalent, may be used for five gallons of apple juice, if one desires to use yeast. The yeast cake is stirred with a cup of water, and after complete disintegration is mixed with the juice. Whatever form of yeast is used, it should be fresh. Vinegar or 'mother' should never be added to apple juice.

Alcoholic Fermentation

"When the alcoholic fermentation is completed, it is well to draw off the clear portion of the liquid, rinse out the cask, replace the clear liquid, add two to four quarts of good vinegar containing more or less 'moth-

er,' and place at a temperature of 65 to 75 degrees. The acetic fermentation occupies from three to eighteen months or more, according to the conditions under which the fermentation is carried on. When the apple juice is stored in a cool cellar and left there until it becomes vinegar of legal standard, it requires from 21 to 24 months, or even more. When the alcoholic fermentation is allowed to take place in a cool cellar, and the casks are then removed to a warmer place, the time of vinegar formation may be reduced from that given above to 15 to 18 months. Where the alcoholic fermentation is hastened by the use of yeast, and the acetic fermentation favored by the proper temperature and addition of vinegar 'starter,' it is possible to produce good merchantable vinegar in casks in from six to twelve months. In vinegar factories, the formation of acetic acid is greatly hastened by the use of 'generators,' in which the alcoholic liquid is brought into intimate contact with a large supply of air. In the hands of the ordinary farmer, making only a few barrels of cider, these generators would probably not be found entirely practicable.

"When the acetic fermentation has gone far enough to produce from 4.5 to 5 per cent of acetic acid, then the barrels should be made as full as possible and tightly corked, in order to prevent destructive fermentation of acetic acid and consequent deterioration of the vinegar."

TEACHING THRIFT

By I. J. Mathews.

School patrons constantly complain that their children are not taught the principles of thrift, as were the children of those hardy pioneers who have made our country what it is. I believe the accusation to be all too true, yet not entirely the fault of the teacher. It seems, however, that certain extravagant habits have been allowed to creep into schoolroom practice.

There is the matter of paper that is an always recurring one in the public school. Of course, it is not wise to carry the idea of thrift too far and to say that the pupils should write all their exercises on wrapping paper or any other kind of blank paper that may be at hand. I have certain forms that I wish complied with when students are writing work to hand in. For instance, I do not want them to write on both side of the paper. They ought, however, to be taught to distinguish between papers to be handed in and those upon which problems are done in the rough. The paper that has been used on one side and handed back is just as good to work rough arithmetic problems upon as are the scratch pads that may be purchased at an added expense.

Teaching the principles of thrift is worth while. It has been emphasized time and again and will be emphasized many times more that the only way to encourage thrift in the whole nation is to encourage thrift in each individual. We do not encourage thrift when we allow these young people who come under our guidance to make extravagant use of pencils and paper.

Writing pencils deserve notice. The loss of a pencil is not much, but the loss of a pencil a week when taken in a family of five people who are going to school gets to be quite an item in the course of a school year. Here it should be brought out that good writing cannot be done with a stub of a pencil, yet these stubs can be taken home for other purposes. They may be tied in the granary, barn and other places where a pencil is always needed at times. The continual loss of pencils not only gets the young person into an extravagant habit, but encourages carelessness in taking care of property. The care of personal and school property is a thing that ought also to be encouraged, but the subject will be reserved for discussion at a later date.

Excursions East

Via

Oregon Short Line

(Union Pacific System)

July 4, 11, 18, 25;
August 1, 8, 15, 22, 29;
September 5 and 12, 1917.

Special low fares to Denver, Colorado Springs, Omaha, Kansas City, Chicago, St. Louis, St. Paul, Minneapolis, Memphis and many other points.

Long limits; diverse routes; stopovers.

Ask O. S. L. agents for rates and further details.

Are You A Fit or Misfit?

Are you planning to push a pen when you are better fitted to work in the sunshine planting corn?

Are you shoveling coal when you ought to be inventing machinery? Are you working on the farm when you could do better selling goods?

Many fail because they are not doing the kind of work for which they are suited. Are you in this class?

These problems should be solved. You should find yourself. Read Dr. F. S. Harris' new book,

The Young Man and His Vocation

It is brim full of practical ideas and suggestions for every young man.

It will help you understand yourself better; your possibilities, your limitations.

The industrial demands of modern life are explained and the reader is shown how he can meet these demands. The opportunities and requirements in each kind of work are discussed in such a way that the young man is materially aided in selecting his life's work and in preparing himself for it.

It will help you choose a suitable vocation, and get the most out of life.

Order one of these books for yourself or boy.

Send \$1.25 Today to

THE UTAH FARMER BOOK DEPARTMENT
Lehi, Utah

There are people who will pooh-pooh at the idea of being thrifty in the use of such small items as paper and pencils. In our large city school systems, the added bills caused by careless use of these items get to be tremendous. Other things may well have the same idea applied to them. People who have never footed the electric bills do not grasp the enormity of the waste which is made often by turning on these lights when they are not needed. Even at this, we find patrons who turn up their noses at any idea of thrift which indicates that we should teach these learners that there is a limit to material things. Nevertheless, the sooner they find out that all these items have a cost, the better it will be for them and everyone concerned, including the citizenship of the nation at large.

MIXED INSTRUCTIONS

Two correspondents wrote to a

country editor to know, respectively, "the best way of assisting twins through the teething period" and "how to rid an orchard of grasshoppers."

The editor answered both questions faithfully, but, unfortunately, got the names mixed so that the fond father was thunderstruck by the following advice: "If you are unfortunate enough to be plagued by the little pests, the quickest means of settling them is to cover them with straw and set the straw on fire."

The man bothered with grasshoppers received this reply: "The best way of treatment is to give each a warm bath daily and rub their gums with boneset."

Every common-sense hog man knows the value of dry beds for pigs. Wet beds are the causes of coughs, colds and pneumonia, so beware!

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH

VOLUME XIII, NO. 49

JULY 14, 1917

METHODS OF ENRICHING THE SOIL

By F. S. Harris, Director Utah Agricultural Experiment Station.

The soil is at the very foundation not only of agriculture, but all human welfare. The industries of man would cease, and he would be left without food and clothing if the soil should fail to produce its bounties. Mines would close, railroads would cease to operate, factories would stop their wheels; in fact, every human activity would in time be discontinued if the soil should lose its producing power. Of all national resources, the one most in need of conservation is the soil. Forests may grow in the lifetime of man, and waterfalls will continue after he is gone; but the soil—the product of ages of nature's work—when depleted can be restored only at great expense. It is important, therefore, that every effort be made to keep the soil as fertile as possible. This may be done in two ways: (1) utilizing as completely as possible the products of the farm, and (2) purchasing fertilizing materials on the market and adding them to the soil.

I. FARM RESOURCES

1. Stubbles of Grain, Clover, Grass, and Corn.

Every crop leaves a certain amount of organic residue which helps to enrich the land by increasing the availability of the mineral plant foods and by giving the soil a better physical condition. The decaying organic matter liberates acids which have a distinct solvent action on the soil. This gives a soil solution more concentrated in plant-foods and consequently assists in increasing the yield of crops.

The value of these plant residues depends on their composition and the ease with which they decompose. Stubble from clover, alfalfa, and other legumes is more valuable than that from the cereals on account of the high nitrogen content of the legumes. These plants have nitrogen-fixing bacteria growing on their roots. These take free nitrogen from the air and fix it in the roots whence it is taken to all parts of the plant, making them high in nitrogen.

Plowing under a grass sod usually leaves the soil in good condition on account of the dense root growth and the amount of organic matter that is incorporated into the soil. Corn stalks and stubble, on account of their coarseness and the slowness with which they decay, are less desirable than many other crop residues; but even they are valuable for the land. The practice of harvesting corn by "hogging" it off not only saves time, but leaves most of the organic matter in the field.

In some sections stubble and straw are burned. This is a very wasteful practice even if it seems temporarily to give good results.

2. Refuse from Potatoes and Garden Crops.

Potatoes, beets, and a number of the garden crops produce large quantities of organic matter that has no direct commercial value. This is often taken from the land and burned. While this practice may be justified where the crop is diseased and the tops might aid in the spread of disease, it certainly should not be encouraged under ordinary conditions. The tops

of a good crop of sugar beets, for example, furnish almost as much organic matter as a regular green-manure crop.

3. Green-manure Crops.

For centuries the raising of crops to be plowed under has been practiced. Many crops have been used for the purpose. On very poor land where but few crops will grow, rye is often raised and plowed under for a year or two till the land is able to raise some other crop. As already explained, legumes make the best green manure on account of their nitrogen-gathering ability. The clovers, vetches, cowpeas,

soybeans, field peas, and alfalfa are all used as green manure crops.

In planting wheat, oats, or barley it is usually possible to sow clover which gets a start by the time the grain is harvested; it then has time to produce a good growth before the end of the season. This, taken with the grain stubble, adds considerable organic matter to the soil and helps to keep it productive.

In orchards a green manure crop can often be raised to advantage between the trees. It is particularly desirable to have a crop of this kind occasionally in regions where clean culture is the rule.

4. Stable Manure.

The use of stable manure is the surest means of enriching the soil. Practically every farm produces a quantity of this by-product of animal husbandry and a wise use of it is as the foundation of permanent agriculture. Since the very dawn of history the excreta of animals have been used as fertilizers. For a long time little was known of the way in which manure improved the soil, but the increase which it made in the yield of crops was very evident. Manure is now known to benefit the soil by adding directly a quantity of plant food, by increasing the organic matter, and by aiding the work of desirable organisms. It may not in all cases be a complete and well-balanced fertilizer for every soil, but its use can always be recommended with safety.

The manure from each kind of animal is different. That produced by poultry and sheep is concentrated and dry, while that produced by cattle and horses contains more water and coarse material. The manure of any animal is influenced by the kind of food it eats, its age, work, and several other factors. Old animals that do little work and eat much feed produce the best manure.

Liquid manure is richer in plant-food elements than the solid, but it lacks the organic matter that is so beneficial to most soils. Good husbandry requires the saving of both the liquid and the solid manure; these can easily be kept together if sufficient bedding material is used to absorb the liquid.

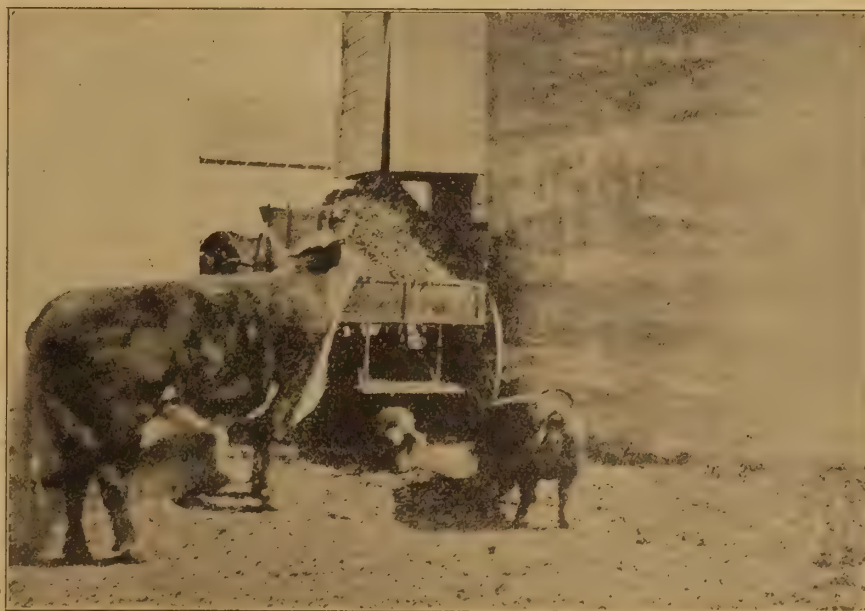
5. Housing Stable Manure.

Losses occur in manure by leaching and by fermentation. Experiments have shown that when left carelessly exposed to the weather for six months manure loses about half its value. This loss can be overcome in large measure by proper methods of storage

(Continued on page 12)



Utah will have the largest wheat crop she ever produced.



Livestock of all kinds like good ensilage.

CULTIVATION AND IRRIGATION

When Carefully and Properly Done Will Increase Your Production

SUGAR BEETS

INFLUENCE OF STAND UPON YIELD OF SUGAR BEETS

By Asa C. Maxson.

The relation of stand to the yield of sugar beets is of especial interest to the grower this year because of the backwardness of the season.

Under normal conditions planting is well under way by the 20th of April. This means that replanting can be done with much more assurance of good results than when the planting is delayed as it has been this spring.

Replanting seldom produces as good a yield as first planting unless the latter produces an extremely poor stand.

That the stand does not influence the yield as much as other factors such as soil, irrigation and time of planting, is certain.

For several years experiments have been carried on to determine the effect of different stands on rich and poor soils. The results show conclusively that the soil has more influence upon

in the soil of the two parts of the field there can be no doubt that the time of planting had a marked influence. Too early planting, however, is apt to give poor yields as a result of frost or disease in the seeding beets caused of unfavorable growing conditions.

We must not jump at conclusions and assume from what has been said that wide spacing, i. e., from 14-16 or more inches, is best. We have been dealing with extremes. There is a very great probability that from 10 to 12 inches is better than either 8-9 or 14-16 spacing.

This year with a shortage of seed a late season and the probability of late replanting we should not be in too much of a hurry about plowing up what may appear to be a poor stand.

A field with a stand of 11.5 inches produced 12.39 tons per acre, while another with 22.8 inches between beets, produced as much as 11.84 tons per acre last season. This latter is as



Showing a plot of sugar beets at the Experiment Station Farm at Logan.

the yield than the stand. On poor soil the difference in yield between beets spaced 7-9 inches and those 14-16 inches was .08 of one ton per acre in favor of the wider spacing and on rich soil 0.5 of one ton per acre.

Beets 7.9 inches apart in the row produced 3.5 tons per acre more on rich soil than on poor soil and the beets 14-16 inches apart 3.2 tons per acre more.

Two fields examined last summer produced 10.7 tons and 13.4 tons per acre. The stand was the same on both, being 6.4 inches between beets on the average.

Two other fields produced 13.4 tons per acre each, one with a stand of 16.4 inches and the other 19.7 inches.

In another case two fields producing 11.9 tons and 11.8 tons per acre had stands of 18.6 inches and 22.8 inches.

In the face of these figures we are forced to conclude that the stand was not the most important factor in the production of yield.

Irrigation has more influence than stand, as will be seen from the following:

As an average of three years' tests, beets spaced 8-9 inches produced 4.10 tons per acre more with 3 and 4 irrigations than with but one. Beets spaced 13-16 inches produced 4.10 tons more with 3 and 4 irrigations than with one.

During the same seasons the spacing made a difference of 1.25 tons per acre with both 1 and 3 or 4 irrigations. The wider spacing produced the heaviest yield through the test.

In 1913 the same kind of seed was drilled on April 28 in one part of the experiment field. On May 17, another part, separated from the first by a 16-ft. road, was drilled. Both of these were irrigated twice. The early planted produced 21.88 tons and the late planted 11.34 tons per acre. Making due allowance for possible differences

good as the late planting in 1913 referred to above.

There are three points which the writer wishes the readers of this article to bear in mind.

1. That no matter how good a stand of beets you may have, if the soil is not good, the time of planting right, or the beets properly irrigated, a poor crop is apt to be the result.

2. That if properly tended throughout the season what may appear to be a poor stand will produce a satisfactory yield.

3. That replanting, especially if late, is very apt to produce no better yield than the poor stand of first planting, which was plowed down.

AGRICULTURAL PROGRESS IN ELKO COUNTY, NEVADA

By J. Carlos Lambert, County Agent.

The County of Elko is in North Eastern Nevada, and has an assessed valuation of \$18,000,000.

The principal wealth of the county consists of cattle and sheep and the two railroads which traverse it. The ranches are very large, ranging in size from 700 acres up to 2,500 acres, and is valued including livestock from \$20,000.00 to a \$1,000,000.00.

Some of the ranchers are now breeding registered cattle and sheep. Mr. John Cazier, formerly of Nephi, Utah, has 175 head of registered Herefords some of them among the finest specimens of the breed.

But the greatest forward step for the future greatness of this vast county is the recent activities in dry-farming. There is a vast amount of land here just suited to dry-farm practices which may be had from the government by homestead or from the railroad by purchase.

There are a few farmers scattered over the county who are now experimenting with wheat, oats and barley without irrigation, with more or less success.

The Southern Pacific R. R. co-operating with the State is carrying on investigations with the farmers of the Metropolis district in dry-farm crops.

The Southern Pacific Railroad has as there farm advisor Mr. H. W. Campbell, founder of the "Campbell System" and a man of international fame. Mr. Campbell believes that by proper tillage large crops can be grown. He is very optimistic as to the outlook of this country.

The railroad distributed a carload of seed potatoes among the Metropolis farmers to be grown under the direction of specialists of the railroad and State. The crop is very promising.

All signs point to a great agricultural awakening in this "neck of the woods."

UTAH'S NEW LAW OF CON- SERVATION OF UNDER- GROUND WATER

By O. W. Israelsen in charge of Irrigation and Drainage Utah Agricultural College.

It was once thought that a person owning land owned everything above the land surface and everything beneath it and that the waters which were underneath ones land were therefore private property. In the celebrated case of Katz V. Walkinshaw decided in California in 1903, this old idea was overthrown and a new idea was adopted in order to better meet the needs of this great Western country. The court pointed out very clearly that owners of land which contains ground water were entitled to the use of sufficient of such water for their own purposes but that any surplus might be taken by neighboring land owners to irrigate their lands. In discussing this question the judges used the following very pertinent language concerning the best use of irrigation water.

"It is not the policy of the law to permit any of the available waters of the country to remain unused, or to allow one having the natural advantage of a situation which gives him a legal right to water to prevent another from using it, while he himself does not desire to do so."

Commenting on the above decision, Mr. A. E. Chandler, member of The California Water Rights Commission and author of Elements of Western Water Law says: "Under the new rule of percolating waters the times and amounts of use by over-lying owner and appropriator may be fixed by the court so that the over-lying owner will have the first use of a reasonable amount for his over-lying land and the appropriator the surplus for the distant land; and in cases of present non-use by the over-lying

owner, the appropriator will be allowed to withdraw the water until the former is ready to use it. In brief, the new rule of percolating waters allows the widest possible use of the source of supply."

Utah irrigators who realize that California is beginning to lead in the matter of economical use of irrigation water and particularly in the use of underground waters, were no doubt pleased when the Utah Legislature provided for a more careful supervision of the use of underground water in this State. The new law which became effective on May 8th of this year, provides;

(1) That county commissioners have the power and responsibility of ordering artesian wells capped when they consider that continuous flow from such wells is wasteful, either of water itself or of the surrounding soil;

(2) For the assembling of valuable data concerning existing artesian wells;

(3) For the accumulation of data concerning proposed artesian wells to be obtained both from owners and boring machine operators.

The following factors represent the type of information which it now becomes the duty of county commissioners to have collected:

(a) Location of well with reference to section corner,

(b) Size of pipe or casing used,

(c) Depth of well,

(d) Amount of water flowing from well,

(e) The static pressure at the mouth of the well,

(f) The temperature of the water,

(g) The log of the well; that is the record of the description and thickness of each kind of material through which the drill passes.

One cannot over emphasize the value to the State which will come from the collecting and properly assembling of data of this kind. It is now quite as necessary to carefully guard the use of underground water as it is to guard the use of surface water. Each irrigator in Utah is no doubt anxious to see the farmers of the State become highly efficient in the use of irrigation water, because he does not like to see his neighbor follow wasteful policies when he himself is in need of water and could use it economically.

County commissioners will render the State great service in carefully enforcing the provisions of the new law concerning the conservation of underground waters.

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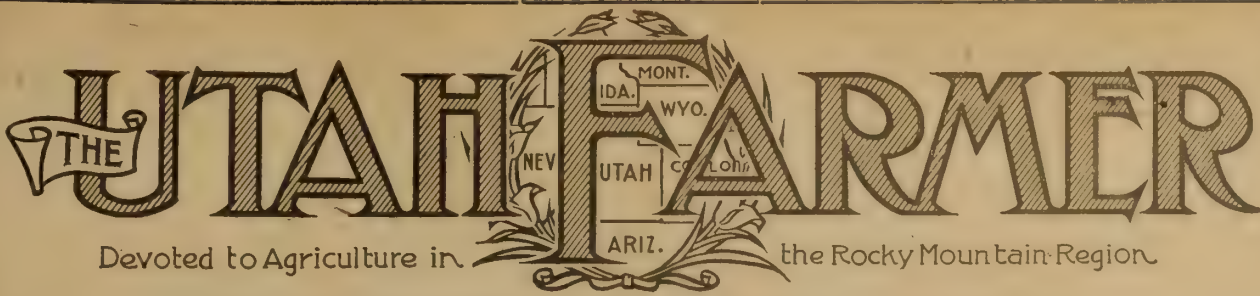


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LEHI, UTAH, SATURDAY, JULY 14, 1917

No. 49

Good Seed--The Problem

By George Stewart, Assistant in Farm Crops, Cornell University, Assistant Prof. of Agronomy at Utah Agricultural College, 1917-18.

Due to the use of poor seed, the farmers of Utah lose yearly many thousands of dollars. Often single farms suffer to the extent of several hundred dollars. The most regrettable and yet the most hopeful thing about the seed situation is that these losses are largely preventable.

Abundant areas of unoccupied public lands have hitherto been within the reach of practically any wide-awake tiller of the soil. The farmer was more nearly sure of larger haystacks and more bushels of grain or potatoes if he doubled the size of his fields than if he attempted more thorough cultivation. These conditions are now, however largely, outgrown. A new West looms on the horizon, a West of keen competition and of high-priced land. Tracts that were sold for a few dollars a generation ago, now change hands at anywhere from fifty to five hundred dollars an acre. With such valuable lands under cultivation, acre-yields must grow apace or the harvest cannot pay interest and taxes on the farm, much less compensate for labor and equipment. Better farming must be practiced. Improved tillage may be different crops, such as sugar-beets on land formerly used for grain only, or they may be superior strains of crops already in use. The most important single step in securing better strains, is to use improved seed.

Importance of Good Seed.

Good seed is primarily essential in the production of good crops because the plant is a direct descendant of that plant from which the seed came. Because of this, the plant can develop into nothing for which the seed does not supply possibilities. Of the factors that influence crop yields, seed has, up to the present, been given the least consideration. On this account it seems likely that the easiest gains may come by focusing attention here.

Not only is the farmer interested, but also the gardener and the florist. Housewives will welcome any improvement in the quality of home-used products. Such betterment, means to them less work, more satisfactory expenditures, and more delicious as well as better-appearing foods. Seed for the home flower garden interests them directly. Business men, too, will gain by any great improvement of seed since better, if not cheaper, products will reach them.

What is Seed?

A seed is the connecting link between two generations of crop plants; it transmits life from the plants of one year to those of another, or from those of one period of years to those of another period. Seed from poor plants are nearly sure to produce poor plants. It is not much more reasonable to expect heavy yields from low-yielding seed than to expect sugar-beets from mangel seed.

When germination begins, the seed-coat absorbs water and the seed swells; the embryo, or germ, sends out rootlets and leaves; the starch stored in the seed undergoes a chemical change that enables it to supply sugar to the growing plant. Not until the sunlight causes chlorophyll to develop in the leaves and the roots

take up water and mineral food, is the plant able to sustain itself independent of the food stored in the seed.

This stored-up food maintains the plant until it can support itself. On this account, the use of badly shrunken seed is attended by considerable risk.

Seed may be practically pure and viable, that is, have the power to grow in the proper length of time, or, it may consist largely of empty hulls or shrunken kernels, as is the case with oats cut green. Some of the blemishes are due to lack of care, others to fundamentally wrong conditions. For example, wet or insect injured seed results largely from unavoidable, though disease or frost injury may have been unavoidable, though disease probably indicates nothing more than that greater care in seed selection was necessary. Stems, broken kernels, and some weeds separate out in screening.

Good and Poor Seed.

Good seed (1) is true to kind, (2) will grow readily, (3) is healthy, (4) is free not only from weeds but from others impurities, and (5) must be adapted to the climate, the soil, and the cultural methods of the district. Seed that lacks any one or more than one of these five qualities is poor.

SECRETARY OF AGRICULTURE URGES EVERY HOUSEHOLD TO CAN AND DRY SURPLUS FRUITS AND VEGETABLES.

Every housewife this year should restore to her home the often overlooked home industries of canning, preserving, pickling, and drying of perishable fruits or vegetables. The large number of new back-yard gardens which have been planted this year shortly will begin to yield their extra harvest of beans, peas, carrots, beets, sweet corn, and tomatoes. The regular supplies also will reach the markets and, as happens each summer, the local supply at times will exceed immediate consumptive capacity. Not to conserve much of this surplusage of valuable food would be sinful waste.

The present food and labor situations are such that no household is justified in looking to others to release it wholly from individual responsibility and constructive action in saving and conserving food. All any home should expect of others is to supply those which can not be produced effectively by its own members. The railroads will be burdened with the transportation of staple foods and civil and military necessities from localities of production and manufacture to districts incapable of supplying their own needs. It follows that all locally produced foods, conserved by home methods, lessen the winter pressure on transportation agencies and also release similar products of factories for other purposes.

I urge every household, therefore, to can all surplus perishable products for which they have containers and to dry and keep in paper any additional surplus suitable for such preservation.

Canning calls for no special skill and for little equipment beyond a wash boiler and jars. Fresh products, cleanliness, and heat are the chief requirements, as even sugar is not essential for canning fruits under modern procedure. Fruits and vegetables, moreover, can be dried efficiently in the sun, over a range or gas stove, or before an electric fan. Homemade shallow trays of wood or heavy wire screen are the chief equipment required. Drying is a time-tried home industry; conservation of food by drying is largely a matter of restoring to the home great-grandmother's method of seeing that her family had good food in winter as a relief from a monotonous diet of root vegetables. Canning and drying can be practiced as effectively in a city house or apartment as on a farm or in a suburban dwelling.

Canning, of course, already is a profitable industry for women and children in thousands of homes and I trust will become almost universal this season. To aid the home conservation movement, the Department of Agriculture has issued a new Farmers' Bulletin on home canning and another home canning and another on home drying of fruits and vegetables. These free pamphlets should be read and followed in every household which wishes to translate patriotic impulse into concrete service.

D. F. HOUSTON.

Prepare For Fairs

By F. S. Harris, Director Utah Agricultural Experiment Station.

Now is the time to begin preparations for the town, county, and state fairs. The fairs have been organized especially for the benefit and education of the farmers, but in some localities so little interest has been taken that the fairs have degenerated into a sort of circus side-show entertainment. If the farmers are wise they will insist that real exhibits of the best quality be given every consideration and the entertainment side lessened. Circusses are brought to town without any expense to the farmer, and at these he has a chance to see clowns and nonstrosities; at the fair he should receive genuine inspiration and instruction.

Usually at the fairs but few farmers exhibit. Often those who look on remark that they have better products at home than the one exhibited. A wider interest is needed on the part of all the farmers. Any agricultural product that is worthy should be brought for exhibition. This interest should be developed not only for the good of the individual, but also for the general welfare and education of the community.

Many farmers seem to think that,

The presence of any deceit brands seed as poor, mainly because it is not reliable.

nothing but the extraordinary should be displayed; consequently they bring potatoes that are as big as a small squash, and leave at home the best commercial tubers. They then blame the judge for not awarding them the prize. Prizes, however, are given on the basis of commercial products rather than for the show of freaks.

In preparing material for the fair do not select overgrown specimens, but get individuals that are even in appearance and of good marketable type. Begin selecting now while crops are growing, as there is much greater opportunity to make a good choice.

At the Utah State Fair in 1916 practically all the prizes were taken by a half dozen exhibitors, not in every case because of the great excellence of their products but because so few farmers sent exhibits to the fair. Why not have hundreds of farmers from every part of the State represented among the exhibitors? Only in this way can the fair be made an institution for the farmer where he can receive information and inspiration to carry him through the next year.

Losses Caused by Poor Seed.

Poor seed causes one or more of three distinct kinds of positive loss to the farmer: namely, (1) a greater expense for good seed, (2) poor crop stands, and (3) the introduction of weeds.

(1) Clover seed costing about \$4.50 a bushel on one market, contained so many impurities that a bushel of clean, viable seed from various samples would have cost \$5.88, \$6.90, \$5.40, \$5.10, \$5.94, \$4.59, \$7.56, \$11.48, \$42.00 and \$23.65. In one sample of old orchard-grass seed, less than one per cent was alive. After making deduction for other faults, a computation showed the cost of one bushel of good seed to be \$703.80. Timothy sold in one store in three grades at \$1.60, \$1.40, and \$1.35 a bushel. Computed to a bushel of good seed these samples cost \$1.62, \$1.68, and \$57.25, respectively. Redtop seed sold in another place in grades at 13.7c, 8.5c, and 5.4c a pound, and cost respectively 17.7c, 81.3c, and 20.7c a pound for good seed. Thus in many cases cheap seed is poor, costing more for actual quantity of good seed than do better grades.

(2) But the extra cost represents only a part of the loss. Seed that does not grow or is weak produces poor stands and thereby cause a loss in a lower yield which uses as much land and requires more cultivation than a full stand. Any bare spots fill with weeds while a complete stand may smother them.

(3) Weed seeds added in planting increase the number of weeds present. To remove them requires additional labor. Extra work is also caused by lowering the yield, by injuring the quality, and by reducing the selling price.

Weed seeds are usually small—so tiny in fact that it is hard to realize how many there may be in a pound of seed. In one almost pure sample testing 1-5 of one per cent weed seed, there were 990 weed seeds for each (Continued on page 15)

Stop Tremendous Manure Waste

Farmers Urged by Assistant Secretary Carl Vrooman to Put an End to Annual Billion Dollar Loss of Fertilizing Materials—Methods Suggested.

Farmers are urged in a statement issued today by Assistant Secretary Carl Vrooman to make every effort to save the vast amount of valuable manure now allowed to go to waste in this country. One-half the manure produced in the United States is not used as a fertilizer, there being an annual loss of material worth twelve hundred million dollars—once and a half the value of the country's 1916 wheat crop.

"This is not a wild guess, but a very shrewd and conservative estimate based on reliable statistics. It has been found that each horse or mule produces annually \$27 worth of manure (as compared with commercial fertilizers;) each head of cattle \$20 worth; each hog \$8 worth. Calculating from the 1910 census figures for number of animals on farms—62,000,000 cattle, 24,000,000 horses and mules, 58,000,000 swine, and 54,500,000 sheep and goats, the total value of manure produced is found to be about \$2,461,000,000. Recent investigations indicate that at least half of this great wealth of fertilizing material is sheer waste. In some good general farming sections not more than 15 per cent of the manure produced is used. Even in the most intensive dairy regions, where cows are largely stall fed and comparatively great care taken with the manure, the loss seems to be approximately 25 per cent.

"Here, then, is a job for the American farmer, worthy of his utmost effort and in keeping with the spirit of this great hour in American history. To save a billion dollars worth of manure is a Herculean task—a veritable latter day Augean stable job—for it means the handling of literally millions of tons of dung and litter. It

means the construction of concrete manure pits, of paved feeding pens or sheds, and greatly increased care in the conservation and use of bedding materials. It means a lot of work, but it is work that can be done at odd hours and moments, and work that will pay tremendous dividends, not only as a war measure, but conceivably for all time, for if we once get the habit of making full use of our available manure supply we are not likely to lapse into the old, wasteful ways again.

"The cheapest and best way to handle manure, where convenient, is to haul it to the field and spread it daily, or at least every two or three days. In this way, if plenty of bedding be used, practically all the valuable constituents of the manure are saved, since leaching after the manure is on arable land merely serves to put the fertilizing materials where they ought to be. In this way, too, loss through heating, or "firefanging," is avoided.

"Many farmers, however, are not so situated as to make it profitable for them to handle manure in this way. For such farmers the concrete manure pit offers an ideal way of saving manure. Such a pit need not entail great expense. A pit 3 feet deep, 12 feet long and 6 feet wide, with walls and floors 5 inches thick, will serve the needs of the average farm. In ground that does not cave in, only an inside from will be needed for such a pit, except where the concrete extends a few inches above the ground to prevent flooding by surface water. The floor should be reinforced with woven wire fencing, put in after about two inches of cement has been laid, the section of fencing being cut long enough to bend up a few inches at either end into the side walls. When the reinforcing has been put in the remaining three inches of the floor is laid, and the forms for the side walls set up and used immediately. Use one part cement, two of sand, and four of screened gravel. A pit of this kind is large enough to hold the accumulation of manure on the average farm until such a time as it can be hauled conveniently to the field and spread.

"Another good way to save manure, especially in the case of hogs or of beef cattle, is to have a concrete paved feed lot, preferably under a shed roof. Where the farmer can not afford a paved floor, a cheap open feeding shed may be made to serve the purpose very well, if abundant bedding is used to absorb the valuable liquid manure. In such a feeding lot or shed, the manure is allowed to gather under the feet of the animals, each day's bedding being strewn over the well-tramped accumulation below. Some farmers using this system arrange their feed racks so that they can be raised from time to time, making it possible to feed till several feet of solidly packed manure has accumulated under the shed. It has been shown that manure suffers little from heating and leaching when handled in this way.

"The feeding shed serves the purpose of giving the general farm, or the beef cattle farm, something of the advantage in the matter of manure saving held by the intensive dairy farm. It has been shown by Farm Management surveys that the manure saved on the American farm under present conditions is almost exactly proportional to the number of animals stall-fed on the farm, and that the manure of animals not stabled has very little effect on yields, except in cases where field crops are "hogged-off" or otherwise pastured down or where pasture is used in a rotation.

"This great war has brought home to us Americans, as it has never been

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emphasized before, the fact that we are the world's champion wasters. Without making any comparisons, and subject to correction if it can be shown that the facts are otherwise, I dare aver that our billion dollar manure waste is the world's greatest single economic leak—the prize of the champion wastrels. With commercial fertilizers scarce, and some of them almost unobtainable, it would seem well worth our while, in this juncture, even without any reference to war conditions, to do everything within our power to stem this tide of loss, especially in consideration of the fact that stable manure is the best form of fertilizer known. And when we consider further the possible effect of a billion dollars worth of manure upon world production at this time when the solemn duty of saving the world from famine devolves directly upon us,—well, the vital need for manure pits and feeding lots in this broad land of ours becomes pretty clearly apparent."

PORK

The Principal Meat of the Army, City and Farm

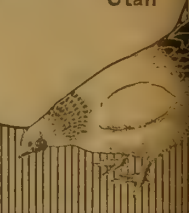
The quickest and surest way of augmenting the meat supply next to the raising of poultry is by raising hogs. The hog is the most important animal to raise for meat and money. He requires less labor, less equipment, less capital, makes greater gains per hundred pounds of concentrates and reproduces himself faster and in greater numbers than any other domestic animal. As a consumer of by-products the hog has no rival. No other animal equals the lard hog in its fat-storing tendency. The most satisfactory meat for shipping long distances on train, boat, or wagon, and for long storage after reaching its destination is mess pork. There is no animal which produces more meat and meat products than the hog.

Pork finds ready sale because packers have discovered many ways of placing pork on the market in attractive and highly palatable form combined with most excellent keeping qualities. There is no other meat from which so many products are manufactured. Very near fifty per cent of the total value, in dollars and cents, of the meat and meat products slaughtered in the packing houses of the United States is derived from the hog. Our country leads by far all countries in the production as well as in the consumption of meat and meat products. Three-fourths of the world's international trade in pork and pork products originates in the United States in normal times, and the war greatly has increased this proportion.

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According to the estimates there was an increase of 9,580,000 hogs between 1910, the census year, and 1916, inclusive. The increase at the end of 1915 was 3,148,000 over the preceding year, while it is estimated that there was a decrease at the end of 1916 of 313,000 hogs compared with 1915.

If we expect to continue to provide meat to foreign peoples as well as our own people, every farmer must make forth the best effort to produce more hogs. Hogs can be kept profitably upon many farms where they are not found today. Farmers who already raise hogs can produce many more; their is not much chance of producing meat this year in excess of the requirements.

More dairy farmers should raise hogs for they fit in especially well upon dairy farms where skim milk, buttermilk, or whey is fed upon the farm. A man who has skim milk is in a better position to raise pigs than a man who has none.

PUNISHMENT WITHOUT CAUSE

An irascible father administered sound thrashing to his son Samu. After he had finished he thundered to the suffering victim:

"Now tell me why I punished you!"
"That's just it," sobbed Samu.
"You nearly pound the life out of me and then you don't even know why you did it!"

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Care of Farm Machinery

Henry Iberson.

There ever was a time when the care of farm tools, implements and machinery should be emphasized, it is today. The spirit of the day is to serve, but some seem to think that does not apply to farm machinery.

It is surprising that here in our mountain valleys so much machinery "wintered out." It has passed the winter unprotected from all the elements we have had. A traveler would get an unfavorable impression of our farmer if he were to judge him by the way they care for their machinery.

One can see binders, mowers, plows, etc., in the middle of the slack seasons with no shelter but that offered by the blue sky! It is even uncommon to see a binder from which the elevator canvasses have been removed, the owner preferring to spend money for a new set of canvasses next year rather than a little energy in removing those that were used during the past season, and which are still in good repair. The wooden parts of this machinery are exposed to decay and the steel and iron parts to rust.

All Farmers Not So Careless. Fortunately there are many farmers who properly house their implements as soon as they complete their share of the season's work, but there are others who prefer the shade of a wire fence, a leaky shed or a combined shed and hen roost, with the hens perching upon the machinery.

There appears to be a direct relation between the farmer who properly cares for his machinery and a well-kept farm with good buildings. An extensive survey proves this fact when it shows that the whole farm, including outbuildings, barn and house, presents a better appearance to the farm of the man who cared for his machinery than on the farms of those who did not. The farmer who properly cares for his machinery naturally does things well, and consequently he has money to spend for more machinery and better buildings. With the price of machinery going higher all the time, and the prospect of it being still more costly, one would think that more attention would be given to the care of it. I believe in buying new machinery when needed but do not think a farmer should waste his money in the way of letting his implements rust out rather than wear out.

The life of machinery depends largely upon the owner. The more care and attention given, the longer the machine will last, and the better satisfaction it will give while in use. Poor care of machinery means waste and hastens the buying of new stuff. Too few farmers realize the extent of this waste, as they do not think of the amount of their investments in machinery and other farm equipment. Experiments have repeatedly brought out the fact that at least 10 per cent of the value of a machine is lost when not housed and properly cared for. It is also recognized that the depreciation in farm machinery due to lack of care is as great as that due to actual use in the field.

The world is asking for food and the farmer must supply it. For that purpose he cultivates his land. Scarcity of labor and the desire for larger and quicker operations have made this work of cultivation a problem, and machinery has been designed to provide a solution to the problem. Then, in order that the most economical use may be made of such an investment, reasonable care must be taken to see that the treatment given will keep the machinery at its best. Too accomplished this, shelter must be provided.

In addition to being well sheltered, machinery should be overhauled during spare time. As a rule, one does

not make repairs until a break-down actually occurs, but in most cases this break-down, together with the loss of time and money resulting, can be avoided by a little time spent in overhauling. If a part is found to be defective it should be repaired now, or a new part ordered at once. Time may not always be so plentiful, and time means money.

There is one thing the farmer seems to overlook and that is the use of paint in the care of his farm machinery. The cost is very small if it can be done by some one on the farm. One or two brushes of different size will

not cost much but will save a lot of money if the tools and machinery are painted.

All working parts of the machine should be oiled thoroughly as oil will prevent the bearing from rusting. A rusted bearing will work stiff and hard, and its life will be short. Gasoline or kerosene used on the bearings in the spring will clear away all thickened oil and grease and will make a great improvement in the ease and lightness with which the machine will work. Oil is cheaper than either iron or breakages, or both.

A little paint will not only protect the wood from decay, but will add to the appearance and consequently to the value. Exposure to wind and weather has a tendency to dry out, crack and warp the wooden parts of

farm equipment. Many a machine's usefulness is impaired by a weakening caused through this, and a wonderful improvement can be made by the addition of a little paint every time it is needed.

Every good western farmer should try the effect of a little judicious care upon his equipment. The satisfaction obtained through working with properly cared-for tools will more than compensate for any time spent in keeping them in good shape.

We ought to count the cost of our tools and know their usefulness. Our machinery is part of our investment. Do we get "value received" out of our implements? Does it wear out or rust out?

Almost as many farm machines rust (Continued on page 13)

Fifty One Years

Back of
the Moline Universal
Tractor is one of America's
oldest, strongest, most reliable farm
implement makers, with over 51 years of
successful manufacturing experience.

You can rest assured that a farm implement with
the name **MOLINE PLOW CO.** on it will not disap-
point you in field performance. The **MOLINE TWO-WHEEL
UNIVERSAL TRACTOR** is no exception. It is proving itself
to be the most popular and practical tractor ever put out be-
cause it fits more completely the needs of the great majority
of farmers. Read below why you should choose it, whether
your farm is large or small.

MOLINE

UNIVERSAL

TRACTOR

1st.—It will do all farm work horses can do—from plowing to harvesting, even **CULTIVATING**—something no other tractor does successfully. Besides supplying power for belt work.

2nd.—It is a **REAL** one-man, all-purpose tractor. The operator rides the tool, not the tractor—rides where he can watch his work carefully.

3rd.—Easy to handle as a team. Turns short; backs up with implement attached; light in weight, inexpensive to operate and will not pack even plowed ground.

4th.—It is the **Original Two-Wheel Tractor**. Both wheels are drive wheels. All its weight is traction weight. Means greater traction and draw-bar pull. Eliminates almost a ton of dead weight.

5th.—The **MOLINE UNIVERSAL TRACTOR** is backed by a \$19,000,000 corporation. It is built in the largest tractor factory in the world with 25 factory branches to give you prompt efficient service.

Write today for **FREE CATALOG FOLDER** and see for yourself how the **MOLINE UNIVERSAL** will solve the power and help problem on your farm.


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PLOW CO.

Dept. 33 MOLINE, ILL.


THE MOLINE LINE Includes:
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Stephens Six Automobiles

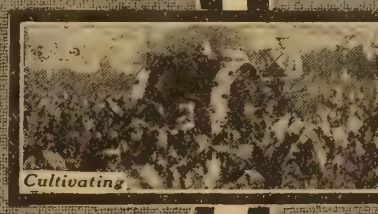





Discing




Drilling



Cultivating



Harvesting



Plowing

Be sure to visit our special display at the Fremont Nebraska Tractor Demonstration
August 6th to 10th.



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Change in Address. When ordering a change in
the address, subscribers should be sure to give their
former as well as their present address, otherwise the
address cannot be changed. This is a matter of im-
portance to you and to us.

OFFICIAL ORGAN

Utah Horticultural Society, Utah State Dairymen's
Association, Utah State Bee Keepers' Association,
Bear River Valley Farmers' Protective and Commer-
cial Association, Agricultural College Extension De-
partment and Utah State Fair Association, Utah-
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OUR GUARANTEE

We guarantee every subscriber against loss through
dishonesty or attempted swindle by any advertiser in
this publication. We do not attempt, however, to
adjust trifling differences between the subscribers and
honest responsible advertisers, nor will we pay the
debts of honest bankrupts. Notice of complaint must
be sent us within thirty days from date of the trans-
action, and the subscriber must have mentioned Utah
Farmer when writing the advertiser.

Advertising Rates. The advertising rates will be
sent upon application.

Keep the cultivator going.

Help is now a serious problem for many farmers.

Save the choice seed of your grain, vegetables
and flowers.

Proper cultivation of crops means increased
profit. Careful tests and experiments have
proved this.

It takes good hard work to win a raise in salary
or a bumper crop of sugar beets or a paying yield
of potatoes. Good luck never yet promoted any
man or helped him raise a good crop. We have
to earn what we get and its a good thing we do.

FIGHT THE GRASSHOPPERS

In a number of places, especially in the north-
ern part of the state, grasshoppers are doing some
damage. Very successful campaigns were waged
against these pests last year in a number of
places. They can be controlled to a certain ex-
tent.

We have published a number of articles on
how to destroy and controll grasshoppers. Do
not delay going after them. They work all the
time. Kill them and stop the waste.

PLAN NOW FOR A SILO.

Many farmers who have not planted any corn
or other products that could be used for ensilage
can secure it from neighbors who have planted
it and will not build a silo. Hundreds of acres
of corn have been planted by the boys and all
this should be put into a silo to get the best
results.

Remember the price of alfalfa last winter and
plan now to have plenty of feed for your live-
stock.

The quality of your hay will depend partly on
the time when it is cut. For good feeding do not
let alfalfa get too old and woody. Cut when it is
just coming into blossom, say when it is one-
fourth in blossom. Do not cut more at a time

than you are able to handle. When too dry, you
lose the leaves and often it becomes bleached.
Make hay while the sun shines but make hay so
as to get the best results. Why not plant some
quick growing grass and make feed of it this fall
or winter. You may have some land that can be
used for this purpose. You should act quick so
as to get all the growing weather possible.

IRRIGATION AND CULTIVATION.

Many of our farmers are learning the difference
in value to a growing crop between irrigation and
cultivation.

The farmer is apt to overlook the fact that a
good cultivation is often more beneficial to the
crop than an irrigation.

The surface may appear dry but that may not
reveal the true condition. Some land, when
irrigated, will bake or form a crust, which is harm-
ful to good growth.

Just as soon as possible after an irrigation, the
land should be cultivated or stirred. Cultivation
helps to hold the moisture.

EVERY WEED AN ENEMY.

We are working for a maximum crop, anything
or any one who prevents or hinders in anyway
is an enemy to the "soldiers of the commissary."
A plant out of place should be destroyed. These
troublesome vagrant plants do no good, but much
harm to our growing crops. They take the
plant food and moisture that should be available
to help the plants, from which we expect to get
our food supply.

As with a fighting enemy so with the weeds,
the warfare should be waged all the time until
superior force has put them under control. We
would fight an enemy, let us fight the weed.

WASTE OF MANURE.

An estimate made by government officials shows
that there is wasted over one billion dollars
worth of manure each year. We must also con-
sider the increased production that might be
made if this great amount of manure was placed
upon the land.

To save this great waste means more work, it
means also more profit to the farmer who uses it.

Once a week or oftener the manure should be
hauled out, and where convenient put upon the
land. Build a concrete pit and save it if you can
not haul it out regularly.

Your land needs the fertilizer. You need the
increased production. There are many reasons
why we should help stop this tremendous waste
of manure.

THOSE WHO WILL NOT WORK.

Something should be done with a certain class
of people who will not work. There is the rich
man's son who does not need to work and many
of them will not. To the credit of many, how-
ever, they are doing their "bit" and helping in
many ways. There is another class who would
rather play pool or waste their time in some
other way than to do any work. Any class are
parasites who live from the labor of others, and
will not work.

The government or state should do something
to make these people work, when labor is so
scarce. One of our states passed a law to con-
trol these conditions.

It is unfair under present conditions for any
man, who is physically able, to be idle. Our
country needs their help. Put them to work or
send them to the front.

CROP PROSPECTS GOOD

Our crop prospects are good, in fact better than
in any other state. In some sections the long
hot spell is going to reduce the amount of yield.

Do not think because we have plenty, that the
starving Europeans are not in need. There is
every reason why we should be more careful with
our crops this year than ever before. More care-
ful in harvesting, more careful in conserving
every thing that can be used for food.

Because we have plenty do not think that there

will be no market at fair prices. If half of what
the government says is true, we must be more
careful in harvesting, storing, and preparing for
market, our food products.

The food bill now before Congress will soon be
passed. The effect this will have on prices is
still a question.

WE NEED MORE COW-

TESTING ASSOCIATIONS

There are many places in Utah where cow-
testing associations should and could be formed.
Where 400 or more cows are within a reasonable
distance, so that the tester can do good service,
an association should be formed.

Why don't you ask your neighbor to join you
and find out just how many cows there are in your
vicinity and then consult the County Agent and
the Western Dairy Division at Salt Lake City and
get something started? Washington has 15
associations, Utah only one. There is not that
much difference between the two states in the
number of cows.

Dairy products are going to be one of the best
sources of revenue for the average farmer. The
only sure way to find out if your cows are pro-
fitable is to test them. The cow-testing associ-
ation cost so little and brings such good results
that there ought to be many more associations
formed in Utah.

CARE OF MACHINERY

With the cost of machinery going up, and from
the present out look, the prices will go still
higher, more emphasis should be given to the
care and repair of our farm tools and implements.
What about your mowers and other harvesting
machinery. Have you gone over them carefully
and tightened all the nuts and bolts? Have you
repaired the broken parts and sent for the new
extras needed? If not you ought to do it right
away. Time is an important factor this year and
now is the time to get your machinery in repair
and good running order for the summer work.
Paint, oil and grease are a big help to any
farmer who will use them properly in the care of
his machinery, and help to make the tool or im-
plement do a better and a longer service. Time
is well spent in properly caring for machinery.
A shed or covering of some kind should protect
it from the sun, rain and wind.

Saving money is just as important as making
money; so it is with machinery. Get full value
and use out of all your machinery. You can do
it only by giving it proper care.

ABOUT THE FEDERAL LAND

BANK OF BERKELEY

In this issue we are printing an article from
one of the San Francisco papers about the
Federal Land Bank of Berkeley. There must
be something wrong, when such men as Dr.
George Thomas and Elwood Mead resign. (The
others we do not know personally). Dr. Thomas was
well fitted for the work. For several years he
was actively engaged in the banking business.
Had made a careful study of rural credits, was
a man of experience and good judgment.

Something should be done—and at once. Think
of all that money in those California banks lying
idle when the farmers of the states connected
with this bank need the money. If Mr. White
is not the right man to head the bank, as the
article suggests, some one else should be put
there. Thousands of farmers should not suffer
because of the mistakes of one man.

In nearly every other division of the Federal
Land Banks, they are making a success. Why is
the one at Berkeley so slow?

Some one with authority should take hold of
this muddle, and set the machinery agoing, so the
farmers can get their money.

As to Dr. Thomas, who is so well known in
Utah, we are not afraid to have the search
lights turned on him. Something is going wrong
or he never would have resigned as he did a
short time ago.

Some Reasons for Delay In Securing Money From Federal Land Bank of Berkeley

Many of our Utah farmers have commented upon the slowness of the Federal Land Bank at Berkeley. They knew the bank had the money to loan, where was it going? Why so little coming to Utah? These questions can partly be answered by the following article taken from the San Francisco Examiner of July 10, 1917. Other coast papers have commented upon their seemingly inactivity. A short time ago three of the five members resigned. Dr. George Thomas of Logan, Utah and Elwood Mead of California. It would seem that the trouble is with the president Mr. White, as this article suggests.

Something unusual has happened or Dr. Thomas would never have quit. He is not a man of that kind. He is of the kind that see a job well done before he leaves it.

Think of all that money lying idle in San Francisco bank when the farmers need it for increasing crop production.

Here is what Mr. Millard says in the Examiner:

"Interest in the muddled affairs of the Federal Land Bank now centers upon the amount of loans made by that institution of which some of the directors confess they know nothing.

"President White's attitude is refusing to make known the total sum of money loaned to the farmers is steadfastly maintained. Every time he is asked about it he declines to give out anything like definite information. Yesterday he said he would let me see the official report when it was prepared, but that it would not be ready until the end of the month.

"So I went to Treasurer George Thomas, whom I found equally reticent. He asked to be excused from making any statement as to the loans or anything else concerning the bank. When reminded that the bank was a public institution and that its affairs were public affairs, he was not much impressed by my words.

"Then I made a preemptory demand upon him for the figures on behalf

of the farmers of California. He sat thoughtfully for a while. Then he rose and asked his assistant to bring in the totals. And here is the pitiful result of the bank's operations since it received its charter on April 9:

Loans to July 1.....	\$83,300
California loans approved and ready to be forwarded July 9 10,200	
Utah loans approved and ready to be forwarded.....	5,500

Total loans to July 9.....\$99,000
\$750,000 LIES IN S. F. BANKS.

"Of this total California's share is just \$71,600, as \$22,900 goes to Arizona and \$5,500 to Utah.

"The whole amount is about one-tenth of the total approved and authorized by the Farm Loan Board at Washington, which is all together \$986,000.

"But here is the big, staring, ghastly fact: There has been lying in the banks of San Francisco for months \$750,000 of government money, set aside for farm loans, and for no other purpose. This money is drawing 2 per cent, but the farmers are receiving no benefit from it, or at least very little. Up to July 1 they had received only \$70,400, or less than one-tenth of the sum to which they were entitled and which the government was eager for them to receive. So far as helping along war crops is concerned, it has not been a drop in the bucket.

"And that's your million a month to the farmers! As a matter of fact it has been but a little over \$40,000 a month up to the 1st of July and will not be much over \$50,000 a month up to the 15th of July.

"WHO IS RESPONSIBLE?"

"Such a financial farce has not been witnessed in this country for many a year, and the question quickly arises, who is responsible for it?

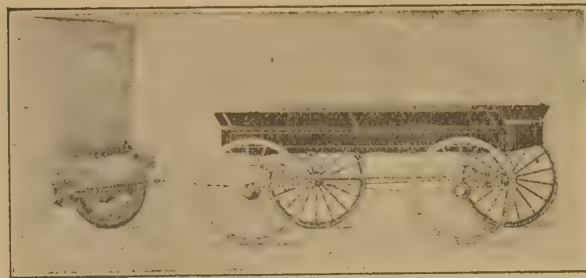
"Nearly every official of the bank working under President White points to him, or rather to his methods, as the reason why the farmers have not received their money. They all say that White has made a one-man bank of the concern. He has wanted to know all about everything and to do everything that was of the least importance. Just before a meeting of the executive committee at Berkeley yesterday it was given out that of the fourteen loans made to farmers' association White had passed upon eleven and that the executive committee upon three! And yet the rules of the Farm Loan Board require that all loans shall be passed upon by the committee. One official told me yesterday that White's programme of lending a million a month was a good one, but that he did not build up the machinery requisite to loan that amount in the small sums—averaging \$2,00—applied for by the farmers.

"BANKS EXPENSES \$100,000.

"Including the salaries of officers, the expense of appraisal, of settling titles, of clerical work, rent and other items, it is officially estimated that the cost of the first year's operations by the bank, at the present rate of expenditure, will be about \$100,000. I have the expert opinion of a well known banker that it would have cost more than that amount to loan out \$1,000,000 a month for the period that already has elapsed since the bank began operations."

"White never has realized the magnitude of his job, until now," said the banker. "He should have had a bigger and more efficient force and he never should have tried to keep such a tight hand on all the bank's affairs. But the queerest part of the whole affair is that the Land Bank was located at Berkeley that it might be near Elwood Mead's office in the College of Agriculture, but Mead is ignored, disaffected and out of the game. Can you beat it?"

"A handy thing that tags behind"



An Emerson Auto Trailer doubles the usefulness of any farmer's automobile.

Attached to the rear axle of your car, it provides a practical truck for every kind of light hauling. It is just the thing to carry farm products into town and bring back the supplies.

And it saves your pleasure car—keeps it from getting all scratched up and old before its time.

Come in and see our large stock of Auto Trailers, ready for immediate delivery. We have them in several different styles, of different capacities and at different prices. There is a style here to fit your car and your requirements.

Miller-Cahoon Co.

Murray

Idaho Falls

Salt Lake

HOW TO CUT SWEET

CLOVER FOR SEED

One-fifth to three-fourths of the total seed yield of sweet clover is lost from shattering. Cutting at the wrong time and improper handling of the crop at the time of harvest are largely responsible for this loss.

White sweet clover and biennial yellow sweet clover may be harvested for seed the year following seeding. It is becoming a general practice in many sections of the country, to utilize the first crop of the second season for pasture, ensilage or hay and the second crop for seed. The shorter growth of the second crop is a very desirable feature as it may be cut with and ordinary grain binder without difficulty. It is possible to equip the grain binder with pans an extensions to the rear elevator plate and binder deck so that at least 95 per cent of the seed which shatters when the crop is cut may be caught as it falls and saved.

The time of cutting the seed crop should be governed largely by the machinery which is to be used. If the plants are to be harvested by a self-rake reaped or a grain binder, they should be cut when approximately three-fourths of the seed pods have turned dark brown to black. At this time some flowers and many immature pods will be found on the plants but the field will have a brownish cast. Where a grain header is employed the plants may become somewhat more mature before cutting. More seed is shattered when the plants are cut at this stage than when cut earlier, but this is not necessarily a loss as the grain header is used for the most part in semiarid sections where shattered seed is depended upon to reseed the land.

Much seed may be lost if harvesting is delayed for only a few days. Many fields have been observed, in which 90 per cent of the seed had shattered in less than two weeks after the time the plants should have been cut. Cutting the plants when they are damp from rain or dew also will reduce loss by shattering.

Help Save The Fruit

One of the big problems and important duties confronting the American people today is the conservation of all foods. Every effort is being made to save every bushel of every crop. Are you doing your bit?

EXTRA FINE Table and Preserving Sugar ABSOLUTELY PURE

Will aid you in putting up your fruit and making your jelly and preserves. The more fruit each individual cans this summer the lower will be the cost of living next winter.

Made by
UTAH-IDAHO SUGAR CO.

When it is possible to thrash in a week or ten days after cutting the crop should be thrashed directly from the field as little seed ordinarily will be lost during this time and the work of stacking will be avoided. The seed may be thrashed either by flailing or by the use of a grain separator or a clover huller. The yield of sweet clover seed varies from 2 to 10 bushels of cleaned seed to the acre. Sweet clover straw may be utilized for soil improvement or as a roughage for stock.

DEAF?

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Free Proof
that
YOU CAN HEAR!

You see the wonderful improved Acousticon has now enabled 275,000 deaf people to hear. We are sure it will do the same for you; are so absolutely certain of it that we are eager to send you the

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On FREE TRIAL
NO DEPOSIT—NO EXPENSE**

There is nothing you will have to do but ask for your free trial. No money to pay, no red tape, no reservations to this offer. Our confidence in the present Acousticon is so complete that we will gladly take all the risk in proving beyond any doubt that

The Joy of Hearing Can Be Yours Again!

The Acousticon has improved and patented features which cannot be duplicated, so no matter what you have ever tried, just ask for a free trial of the New Acousticon. You'll get it promptly, and if it doesn't make you hear, return it and you will owe us nothing—not one cent.

General Acoustic Co., 551 Monadnock Bldg., San Francisco, Calif.

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TAGS**

Samples Free
ATTACHED INSTANTANEOUSLY
Name and Address. Numbered if Desired.
LEG BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

HOME

HOME DRYING OF VEGETABLES AND FRUIT

Years ago the drying of fruit was quite extensively. Many of our people will know how to do it. In order to conserve our crop of vegetables and fruit the government is emphasizing the need of drying, where it can not be canned or bottled. Under present conditions it would seem that drying will be necessary in order to do our "bit" in saving or conserving and helping to feed the world. When we help our selves we have more food to sell.

Here are three methods of drying that have been found to give satisfactory results. These are sun drying, drying by artificial heat, and drying with air blasts, as before an electric fan. Trays for drying by any one of these methods, as well as tray frames for use over stoves or before fans, can be made satisfactorily at home. Frames and trays for use with artificial heat may be purchased complete if desired.

Homemade trays may be made of side and end boards three-fourths of an inch thick and 2 inches wide, and bottom boards of lathing spaced one-fourth of an inch. If desired, one-fourth-inch galvanized wire mesh may be tacked to the side and end boards to form the bottoms of the trays. Frames for use before fans may be made of wood of convenient size. Frames for use with artificial heat should be made of nonflammable material to as great an extent as possible. As many as six trays may be placed one above the other when artificial heat is used. In drying before a fan the number of trays that may be placed one above the other will depend, to a large extent, upon the diameter of the fan. In drying in the sun, trays as described may be used or the products to be dried may be spread on sheets of paper or muslin held in place by weights.

Preparing Products for Drying

Vegetables and fruits will dry better if sliced. They should be cut into slices one-eighth to one-fourth of an inch thick. If thicker, they may not dry thoroughly. While drying, the products should be turned or stirred from time to time. Dried products should be packed temporarily for three or four days and poured each day from one box to another to bring about thorough mixing, and so that the whole mass will have a uniform degree of moisture. If during this "conditioning" any pieces of the products are found to be too moist, they should be returned to the trays and dried further. When in condition the products may be packed permanently in tight paper bags, insect-proof paper boxes or cartons, or glass or tin containers.

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

RECIPES

Spinach and Parsley.

Spinach that is in prime condition for greens should be prepared by careful washing and removing the leaves from the roots. Spread the leaves on trays to dry thoroughly. They will dry much more promptly if sliced or chopped.

Garden Beets, Onions, Carrots, Turnips, Parsnips, Cabbage.

Beets: Select young, quickly grown, tender beets, which should be washed, peeled, sliced about an eighth of an inch thick, and dried.

Turnips should be treated in the same way as beets.

Carrots should be well grown, but varieties having a large woody core should be avoided. Wash peel, and slice crosswise into pieces about an eighth of an inch thick.

Parsnips should be treated in the same way as carrots.

Onions: Remove the outside papery covering. Cut off tops and roots. Slice into one-eighth-inch pieces and dry.

Cabbage: Select well developed heads of cabbage and remove all loose outside leaves. Split the cabbage, remove the hard, woody core, and slice the remainder of the head with a kraut cutter, or other hand slicing machine.

All the products under this heading should be "conditioned" as described above.

Beet Tops, Swiss Chard, Celery, and Rhubarb.

Beet tops: Tops of young beets in suitable condition for greens should be selected and washed carefully. Both the leaf stalk and blade should be cut into sections about one-fourth inch long and spread on screens and dried.

Swiss chard and celery should be prepared in the same way as beet tops.

Rhubarb: Choose young and succulent growth. Prepare as for stewing by skinning the stalks and cutting into pieces about one-fourth inch to one-half inch in length and dry on trays.

All the products under this heading should be "conditioned" as described.

Raspberries.

Sort out imperfect berries, spread select berries on trays, and dry. Do not dry so long that they become hard enough to rattle. The drying should be stopped as soon as the berries fail to stain the hand when pressed. Pack an "condition."

HOW TO CAN GREEN PEAS AND SNAP BEANS

Housekeepers can easily can surplus green peas and snap beans, which are beginning to appear in home gardens in many sections. The season has been unusually good for peas, and home gardeners in many localities are reporting unexpectedly heavy yields. Either of these products readily can be canned with no other home equipment than jars or cans and a wash boiler fitted with a false bottom of slats to keep the jars from resting on the bottom.

Do not try to can peas or beans that have been long off the vines—the fresher the vegetables the better the product.

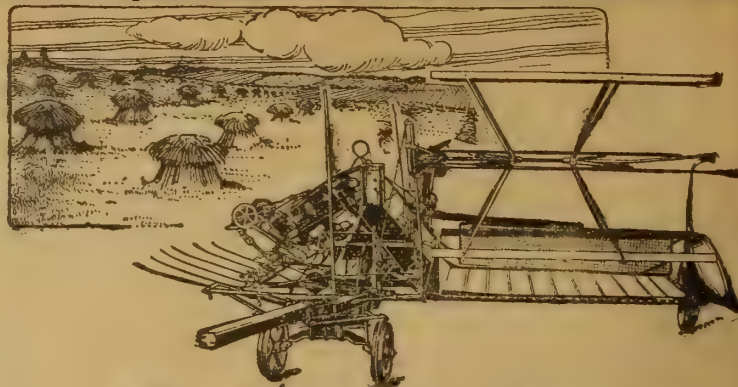
Shell peas. In case of beans string and cut them as if for cooking.

Put the prepared vegetables in a cheesecloth bag or colander and blanch in live steam from boiling water for from 5 to 10 minutes.

Next dip the blanched product quickly in cold water and remove it almost immediately.

Pack the product immediately into hot scalded glass jars or tin cans.

Fill the containers completely with boiling hot water to which has been added 1 level teaspoonful of salt per quart. Place rubber rings on jars and screw tops almost, but not completely, tight. The water in the boiler will



An Unusual Year

THIS may be the last year you will have a chance to market your small grain at such high prices. Naturally, you will do everything you can to secure a good crop and to harvest every last grain of it. The size and quality of the crop may not be entirely under your control, but the harvest is yours to make or break. It depends almost entirely upon the binder you use.

If your binder is not in first-class condition, get genuine I H C repairs for it at once and put it in shape. If it is too far gone for that, buy a new Champion, Deering, McCormick, Milwaukee, Osborne, or Plano binder now, while deliveries can be made and the machines gotten ready for work before harvest time. See your local dealer early in the season and arrange with him to have your binder delivered in plenty of time to assure the complete harvesting of your crop.

The twine situation this year is complicated by a number of unusual features, but we are furnishing our customers with twine of as good quality as ever. Quality in twine is more important than price. At the same time, just as a matter of insurance, it will be wise to make your twine purchases as early as possible. The dealer will appreciate any aid you can give him by placing your orders for I H C repairs, twine, and harvesting machines at the earliest possible moment.

International Harvester Company of America

(Incorporated)



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Bales at Highest Speed—Lowest Cost

UNBEATABLE records for baling greatest amount of hay in the shortest amount of time and at lowest expense for power and crew being made constantly with

The Admiral Motor Hay Press—The Hay Press With the Hustle

Has the hurry built right into it. Simple as A B C. Free from needless parts. Smooth running—easy on the engine that runs it. Engine absolutely dependable, thoroughly tested for all conditions of field work. Plunger operates on the power which comes through a long lever working against the sharp grip behind the plunger head. Result, each stroke is powerful, with no back kick. Many exclusive features. A big money maker for the man who uses one. J. N. Inman & Sons, (Haybalers), Independence, Mo., say: "Bales 90-80-lb. bales in 55 minutes from windrow, and 70-70-lb. bales in 50 minutes from stack. Have made big money." Hundreds have had the same experience. Admiral Hay Press Co., Box 55, Kansas City, Mo.



SOLD BY UTAH IMPLEMENT-VEHICLE CO., SALT LAKE.

not enter these partially closed jars. Seal tin cans completely.

Put the jars or cans in boiling water in the wash boiler so that the tops are partly or wholly covered. Sterilize for 180 minutes in the boiling water counting from the time the water begins to boil again. If other canning outfits are used, sterilize as follows:

Water seal, 214 degrees.....	180
5 pounds steam pressure.....	60
10 to 15 pounds steam pressure	40

Wax and string beans as well as young tender peas may be sterilized in 120 minutes.

Remove jars from boiler or sterilizer, tighten covers, invert to cool and test the joints for leakage. Examine cans for leaks. Even the slightest leak if not closed completely at once, means that the product in all probability will not keep.

Do not place glass jars to cool in a draft which is liable to cause them to crack. Wrap jars in paper to prevent blanching and store in a cool place.

If peas are roughly handled in blanching or cold dipping, or split or broken peas are not removed before packing, the liquid in the jars may have a slightly clouded appearance. If sterilizing has been properly done, cloudiness is no evidence that the product has spoiled.

Send your order for butter wrappers to Utah Farmer.

USING THE LEFTOVERS

No Food Should Be Wasted.—How to Use Some of the Leftovers.
Left-over Navy Beans

Cut up an onion and drop into some hot grease. When brown add a small dish of cold navy beans, fry a while, then add a can of tomatoes (or chopped fresh tomatoes), season to taste, cook steadily for 5 minutes, then serve.

Creamed Veal or Chicken

Take as much finely flaked cold veal or chicken as is desired. Mix it well with a very rich cream sauce. Put it into baked patty pan shells and set it into the oven till it heats through.

Sauce for above: Into a saucepan put 1 tablespoonful of flour mixed with a cupful of sweet cream; stir in 1 tablespoonful of butter and a little chopped parsley. Set the pan in a vessel of boiling water and, stirring well, cook. When taken from the fire add another tablespoonful of butter and pour over the meat.

Ham Loaf

Unjoint a ham-bone where the meat has been cut away in frying, and soak over night in water with 1 tablespoon of salt and 1 teaspoon soda. The fresh salt will draw the briny salt from the meat and the soda helps clean and makes tender for cooking. Trim and rinse well. Boil until perfectly tender, remove meat from bone and grind in meat-chopper. Season well with any preferred meat season-

ing; red pepper, sage, mustard and vinegar may be used. Grind the second time and mold in cake. Slice for use.

Baked Hash

Try this way of utilizing the leftover meat from a roast or stew: Line a buttered baking dish with mashed potatoes. Season the chopped cold meat with salt and pepper, add butter, a little chopped onion and also the leftover gravy. Pour in the baking dish and cover over with more of the mashed potatoes. Bake until lightly browned.

Salad From Leftover Vegetables

Many cold vegetables can be used for salad. If not enough of one kind, several may be mixed together; a little chopped onion adds greatly to the flavor. Serve on lettuce leaves with either French or mayonnaise dressing. Any that have had a cream or white sauce can be put under the cold water faucet, thoroughly rinsed and put in icebox to chill first before using. Peas, string beans, beets, cauliflower, asparagus can all be use separately or together.

HOOVER ASKS PEOPLE TO SAVE FOOD TO HELP SUPPLY THE ALLIES

An appeal to the American public to help win the war against Germany by organizing to save food for supplying the Allies has been made by Herbert C. Hoover. Quoting an European statesman saying the war would be won by the last 500,000 bushels of wheat, Mr. Hoover says:

"It is within our power to give this last 500,000 bushels, but only if we organize to produce, organize to save and organize to supply all."

Only by self-sacrifice in America can the war be won, Mr. Hoover declares.

"Autocracy has been for years," he said, "organizing its resources to the end that they have placed one out of seven of their population on the fighting line and have so mobilized the civilian population as to afford them complete support. They have suppressed production of every luxury, and reduced every necessity. Their arrogant confidence that they will become masters of the world is based on the belief that the materialism, the selfishness and the jealousy of individual interests in democracy makes it impossible for a democracy to organize such a strength. They do not deny the bravery of the men of democracy in battle, but they comfort themselves in the belief that we have not the self-sacrifice at home for their support."

"Our problem is not alone to mobilize our civilian population for the support of our fighting men, but we also have the responsibility of the support of the fighting men of our allies. We must feed our allies that their people may remain constant in the war. Liberty cannot be maintained on the empty stomachs of the women and children."

"Out of our abundance, by eliminating waste and extravagance, it is in our power to hold the wolf from the door of the world. Our obligation is greater than war itself—humanity demands it of us."

"The food administration is a volunteer organization to be endowed with powers by the government."

"There is no dictatorship in volunteer effort. It is by voluntary mobilization that we can answer autocracy with democracy. It is as great in efficiency and greater in spirit."

A PAT OF BUTTER

"Many a Mickle Makes a Muckle."

One pat or serving of butter is a little thing—there are about 64 of them in a pound.

In many households the butter left on the plates probably would equal one pat or 1/4 of an ounce daily—scraped off into the garbage pail or washed off in the dish pan.

But if every one of our 20,000,000 households should waste 1/4 of an ounce of butter daily, on the average, it would mean 312,500 pounds a day—114,062,500 pounds a year.

To make this butter would take

265,261,560 gallons of milk—or the product of over half a million cows.

But, butter isn't eaten or wasted in every home, some one objects. Very well. Say only one in 100 homes wastes even a pat of butter a day—over 1,000,000 pounds wasted. Still intolerable when butter is so valuable a food and every bit of butter left on a plate is so useful in cookery.

HANDY THINGS

A mattress is very difficult to handle but can be easily managed if two straps or handles are firmly sewed to each side. Old suspenders are fine for this purpose.

When there is no fire, the hot-water bottle, two flatirons or a soap-stone will help the bread to rise.

A fruit can filled with boiling water and placed in a flannel bag is a good substitute for a hot-water bottle.

Clothes can be more easily ironed and will look better if the buttons are sewed on just as far apart as the width of the flatiron.

In our home cottage cheese is always a staple article of food, as we make it nearly every week. Washing the muslin bag in which it drains required time until we found it drains just as well in the calander which is easily and quickly washed.

When stirring up thickening use a fork instead of a spoon and you will never have lumpy sauces or gravies.

When baking custard always place the pan in another vessel that contains water and your custard will have a velvety appearance—unless you have an abnormally hot oven.

When making mush or cooking any cereal use half skimmed milk instead of all water and increase the food value.

Try coal oil for cleaning the sink stove or any utensil where the odor is not objectionable. Don't use it on the stove when there is a fire in the stove.

Hours, yes days, are wasted in

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See the "Z" Engine and you will buy it. You will recognize its simplicity—power—strength and economy on sight. Compare it on merit by any standard—point by point. You will see that the "Z" is the one best engine "buy" for you.

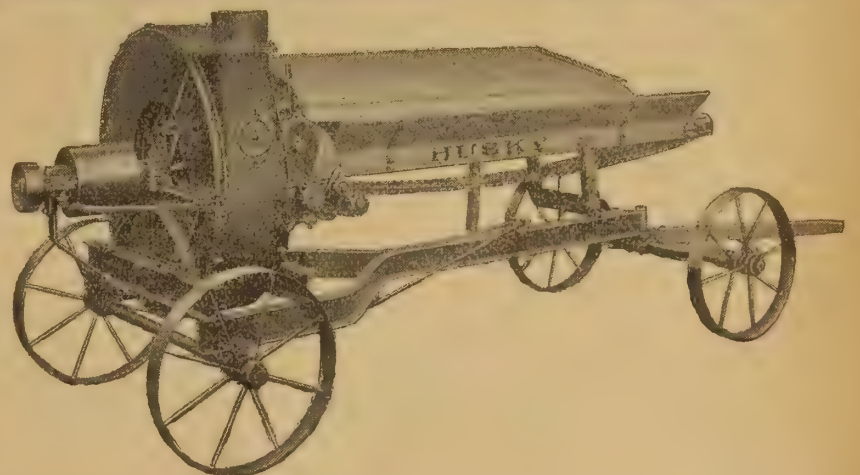
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3 H.P.—\$82.00
6 H.P.—\$143.00
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We are in position to furnish you complete outfits and solicit your inquiries.

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FAIRBANKS-MORSE AND CO.

Salt Lake City

churning cream that is too cold or too warm. Buy a dairy thermometer and save time by having the cream just right.

A piece of flannel soaked in paraffine oil over night and then dried makes an excellent dustless mop for varnished floors. We have used one since early spring, washed it in hot suds every week and it is still in good condition.

WHY MEN LEAVE HOME

"He left his home all for her."
"Why, so?"
"Well, you see, hers was the better home."

HE PREFERRED CASH

Smart Youth—Have you a few moments to spare, sir?

Millionaire—Young man, my time is worth \$500 an hour, but I'll give you ten minutes.

Smart Youth—Thanks, but if it's all the same to you, sir, I believe I'd rather take it in cash.

SMILING TO THE TOP

The man with a smiling face Gets along better in the race; Better comes and goes the stock Better grows and yields the crop; Going out and coming in Things go pretty well with him.

DAIRYING

THE FERMENTATION OF SILAGE

By A. R. Lamb, Iowa Agricultural College.

Certain other well-known fermentative processes are somewhat similar to silage fermentation. When hay is stored too green it is likely to heat, even to the combustion point. This heat is only the outward evidence of other changes which are taking place in the hay. Grain stored in bins undergoes certain chemical changes, which sometimes develop a noticeable amount of heat. These and similar changes, which are undergone by all living plant material when stored in large masses, are in some respects like silage fermentation. The fermentation of sauerkraut is also similar in that the preservation of the kraut depends upon the formation of organic acids by bacterial action. The formation of vinegar from cider involves the production of acetic acid, which is one of the acids found in silage. This change takes place necessarily in the changes which are normal to the formation of good silage take place almost entirely in the absence of air.

Since corn (maize) is the principal silage crop in this country, all references to silage will be understood as being to corn silage unless otherwise stated.

In silage making the chopped corn forage is tightly packed into an air-tight silo, with plenty of moisture present, and fermentation begins at once. The first evidence of change are a slight rise in temperature and the evolution of carbonic acid gas. This gas is generally known to be poisonous, but accidents still occur occasionally when the gas, which is heavier than air, collects in a partially filled silo. If a lighted lantern lowered into the silo is extinguished, it is almost certain death to enter before the gas has been driven out by starting the silo-filler or by opening a door near the surface of the silage. The temperature of the silage rarely exceeds 85 degrees to 90 degrees Fahrenheit, except near the surface, where fermentative processes are greater, owing to the presence of air. Erroneous ideas regarding the importance of the heating in silage fermentation were derived from observations made only on the surface of the silage. The oxygen in the silage is used up early in the process of fermentation or driven out by the carbonic acid gas. From this point the presence of air or oxygen is fatal to the proper preservation of the silage, because air permits the development of molds, which are themselves sometimes poisonous, and which quickly destroy the acids and thus allow the silage to spoil. The importance of air-tight walls and proper packing down of the silage to keep out the air is, therefore, at once apparent.

The Formation of Acids.

The next changes noticed during the silage-making process are a change in color and the development of a more or less pleasant aromatic odor and a sour taste. The color and odor are characteristic of silage and are of considerable value in judging its quality; but the most important change is the formation of acids which cause the sour taste. The acids formed are chiefly lactic acid, which is the acid, found in sour milk, and acetic acid the acid of vinegar. The total amount of acid formed averages between one per cent and two per cent of the weight of the silage. This change is important because it indicates that the fermentation is healthful, like the ripening of cream or the formation of vinegar, instead of being a state of unhealthy decay, like the putrefaction or spoiling of meat. In the presence of this acid fermentation it is impossible for the bacteria which cause decay to live and work, unless the presence of air should allow the growth of molds, which in turn de-

stroy the acids, and thus allow the putrefactive bacteria to thrive. This last process is what occurs in the top layer of the silage in the silo, which is spoiled because of the presence of air. The formation of acid is, therefore, one of the most important of the changes which take place in the fermentation of silage.

The Formation of Alcohols.

Other changes occur in the process which are not appreciable to the senses, and which can generally be detected only by chemical analysis. One of these is the formation of a small amount of alcohols, chiefly ordinary or grain alcohol. The total amount of alcohols generally varies between 0.1 per cent and 0.4 per cent of the weight of the silage, or as much as 0.5 per cent of the juice. The source of the alcohols, as well as of the acids, is the sugar originally present in the plant. Experiments conducted by the writer show that the amount of sugar which disappears is almost exactly equivalent to the amount of alcohol and acid formed. About one-half of the sugar present is ordinary cane sugar. This is first broken up into simpler sugars, such as glucose, and then the simple sugars are changed into alcohol and acid.

Other recent experiments show that the amount of simple sugars by the silage is at first increased by the breaking up of some of the starch; but the total amount of sugar present, after fermentation is over, is much less than in the green plant material. Sometimes practically all the sugar is used up. The amount of sugar in the green plant, and, therefore, the amount of acid in the silage, depend upon the maturity of the plant when harvested. The amount of sugar in the plant decreases as the plant approaches maturity.

Another characteristic change is the breaking down or digestion of protein matter, or the flesh-building constituent of foods. This merely anticipates some of the digestive processes in the alimentary tract of the animal which eats the silage, and therefore does no harm, since little or no nutritive value is lost.

PUT STOVER IN THE SILO

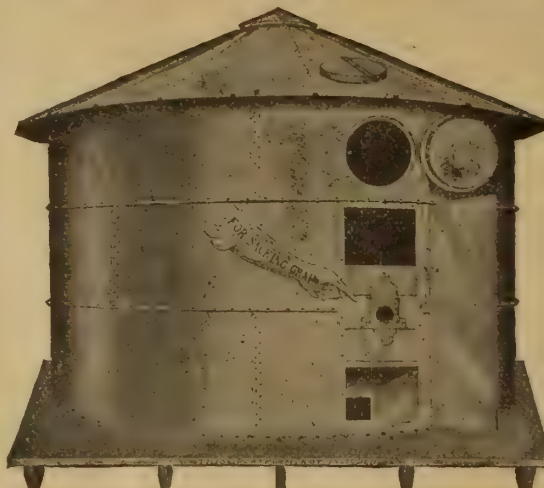
Because there is a much greater acreage of corn planted this year there will be a great deal of corn stover. The most economical way of handling corn stover is to put it in the silo. If generally adopted, this practice would end a waste through wrong methods that now amounts to thirty-five per cent of all the stover fed says the U. S. Department of Agriculture. It would place at the disposal of the farmer an enormous mass of roughage to cheapen the cost of producing meat and to maintain soil fertility in the most economical of all ways—by the production of manure.

That the value of stover as fed is recognized to some extent is indicated by the fact that 81.5 per cent of what is produced is fed in some way. Frequently, however, it is not the right way. For instance, such practices as "pulling the fodder," or "topping" the corn are most wasteful but approximately thirty per cent of matured corn is handled in one of these two ways. The stalks that are left standing in the field are pastured, plowed under, or burned.

To burn stover is a crime against intelligent agriculture for which it is difficult to find any explanation except obstinate ignorance on the part of the perpetrator. It offers a quick and easy method of cleaning the ground for plowing but that is a small offset for the waste of good material. Plowing under and pasturing are better but they also involve some waste.

On the other hand ensiling the stover means that its feeding value is utilized to the full. A quantity of roughage is provided which lessens

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Thousands of dollars are saved to the farmer every year who has had the forethought to invest in this essential to all grain raisers—The Grain Bin. More is to be made by the farmer who invests in one this year for the first time. This from the fact that there will be a greater demand for grain and the fact that he will be able to carefully keep his crop until the price is such that he can get a good figure for his harvest.

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Can you afford to let the opportunity slip? Get in touch with us today and let us tell you all about it. A postal card will bring the information.

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"EVERYBODY KNOWS SAM PETERSON"

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We Carry a Complete Line of McCormick Repairs—Get Your Order in Early.

Thousands of farmers every year make the serious mistake of disposing of their crop at harvest time or immediately after.

THE PRICE IS LOWEST AT THAT TIME

Statistics show that the man who can handle, and hold on to his crop until after the harvest flurry is the one that really gets the price for his grain that he is entitled to.

THE GREAT "COLUMBIAN" BIN

Scientifically constructed after years of study and work to make it best—constructed by the largest bin manufacturers in America—it has proven itself the most practical grain bin on the market today. Theft proof, rat proof, storm proof, heavily galvanized so it can't rust, built heavy and strong and lastly, it is so constructed that it keeps your crop in good condition always. Grain buyers will buy crops that have been stored in "Columbian Bins" quicker than any other crop. They know it has been kept right.

the need for expensive concentrates and makes the production of meat more profitable by lowering the cost of manufacture. Obviously, this is a stimulus to the keeping of livestock, which from every point of view is most desirable.

In preparing stover for feeding, chopping or shredding increases its palatability and enables a greater quantity to be stored in a given space. Both of these methods, however, involve the use of additional labor and can only be recommended when labor and power are cheap and abundant. Cutting and shocking, on the other hand, involve some waste but, in general, this is offset by the saving in labor.

No matter how it is prepared corn stover with a little grain or other concentrate is an excellent roughage for wintering cattle, especially mature breeding cows. In some sections it is the sole roughage used for this purpose. In others, oat straw is added.

SAVE BABY BEETS FOR

WINTER USE

Now is a good time for garden owners in many sections who have more beets of the early crop than they can eat in the fresh form and an abundance of glass jars and tin cans, to can baby beets.

How to Can Baby Beets.

Grade for size, color, and degree of ripeness. Wash thoroughly, use vegetable brush. Scald or blanch in hot water sufficiently to loosen the skin. Dip quickly into cold water. Scrape or pare to remove skin. Pack whole vegetables, slices, or cross-section pieces in hot glass jars or tin cans. Add boiling hot water until full. Add level teaspoonful salt to quart. Place rubbers and tops of jars in position; partially seal, but not tight. Cap and tip tin can completely. Place on false bottom in a vessel of hot water which just covers the containers. Sterilize at boiling temperature in hot water bath canners for 90 minutes.

Drying Beets.

If the early crop of beets is abundant but jars or cans are not available,

Help Your Boy

It is every father's business to advise and help his boy.

To guide and start him out right in life.

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To do so means his success.

Get one of Dr. F. S. Harris' new books.

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It explains the various sides of every kind of work—tells the preparation for each, the opportunities of each and the pay from each.

It points out, suggests, encourages.

It will help you to help your boy. It will help your boy to choose for himself.

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THE UTAH FARMER

Lehi, Utah

the surplus young beets may be dried for winter use.

Select young, quickly grown, tender beets. Wash, peel raw, slice about one-eighth inch thick, and dry over a stove, before an electric fan, or in the sun. The dried product may be packed in paper cartons, in paraffined paper bags, baking-powder or coffee cans, or other containers which will exclude moisture and insects.

Sent in your orders for Butter Wrappers to the Utah Farmer.

Live Stock

FUTURE OF THE HOG IS BRIGHT
Disparity Between Price of Pork and
Price of Feed to Produce It Is
Vanishing.

By E. J. Iddings, Dean of the
College of Agriculture of Idaho.

There is reason for optimism among those interested in the future of the hog. Many who have hastily unloaded foundation herds will find it desirable and advisable to restock within the next few months to come. Let us, therefore, do what we can to insure maximum production from herds now in existence and by saving good gilts and brood sows from slaughter at the market aid the establishment of new herds at reasonable cost. In doing this, we will be aiding the cause of diversified, or good farming, and will be contributing a portion to meet the needs of the nation and its people.

It is not many months in the past when little interest in hogs was found among the farmers. A large number of men who had formerly produced hogs for market and who had been more or less keenly interested in the business became discouraged and quit. On one irrigation tract in Idaho where accurate records were kept as to the swine population there were 48 per cent less hogs January 1, 1917, than January 1, 1916. It is probably safe to estimate that in the state as a whole there was on the first day of last January not to exceed one-half the swine as compared with January 1, the year before. In some districts hogs of all kinds and ages had been sold so close that on farm after farm not even a single pig could be found.

The Price Disparity.

The cause for this condition can be readily assigned. Something like two years ago grain began to advance in price to a marked degree, but market prices for swine did not advance accordingly. There was no noticeable trend upward in prices paid for marketable hogs until February, 1916. With hogs at 5 and 6 cents, and steadily ascending cash prices paid for grain, the farmer was strongly tempted to unload his hogs. In addition, there were many farmers who saw greater advantage in turning entirely to grain production with high prices in prospect, and these farmers sacrificed other livestock as well as swine.

Pulling Heavy Loads

Save the horses, save the harness, save the wagon—it's all a question of using the right axle grease. You'll be surprised at the difference it makes when you use—

YANKEE Axle Grease

This axle grease has a pure graphite base; maintains a velvety film, which does not run off, but covers every moving part.

Utah Oil Refining Co.
SALT LAKE CITY, UTAH

Future Looks Bright.

Fortunately for the farmer and for the future of the business of swine production there is again an attractive field for the pork producer. There is nothing unreasonable in the relative prices of 2 to 3 cents per pound for grain and 12 to 15 cents for hogs, live weight. After pigs are of some size a pound of gain can be produced on them with the use of four to five pounds of grain using grain alone. When the pigs are young gains can be produced with much less expenditure of concentrates. By the use of by-products and various feeding supplements grain can be saved and cost of production decreased in finishing old hogs for market.

The farmer, therefore, again sees promise of profits and of a satisfactory business for him in the growing and handling of hogs.

There Are Some Good Herds.

A number of Idaho breeders of pure-breds retained their faith in the humble porker and have small herds that can be rapidly enlarged to supply the increasing demand for pure-bred boars to head herds and for pure-bred sows and gilts to start new herds. There is increased interest that indicates to the writer a revival of interest in and enthusiasm for swine production as a profitable and desirable feature of Idaho farming methods.

In addition to the fact that good prices for swine and the promise of profit to the producer spells revival of the business there is a feature of national necessity involved. One of the real and vital needs of the United States and her allies in the next few months, and possibly years, is the need of meat for human food and of oils and fats for both war and food purposes. The experience of European nations is that the animal side of production must at all events be entirely safeguarded. Next to the dairy cow the hog makes the greatest returns of edible products from food consumed of all the farm animals.

FALL FORAGE CROPS FOR HOGS

In many sections of our State such crops are suggested below has not been used. Many places fall hog pastures include succulent crops as well as grain crops to prepare the pig for the short heavy grain feed fed later in the season to finish for market.

Sorghum and Rape

These two plants will furnish a limited amount of green feed from summer until late fall if given an occasional period during which to recuperate, and not pastured too heavily. They furnish succulence to keep the digestive tract in good condition, and nutriment to grow bone and muscle.

Velvet Beans.

This crop is coming into prominence in the far South as it produces an abundance of protein food at a relatively low cost. Sow in drills after corn planting time with some supporting crop such as sorghum or corn, and cultivate until the beans begin to vine. If pastured in October after the beans are mature, pigs should gain from one to one and one-half pounds per head per day.

Peanuts.

Where the season is favorable for their growth, peanuts are one of the best fall forages for pigs. The only cost of the crop is for seed and cultivation as the pigs do their own harvesting. The Spanish variety is best for this purpose and should be planted four months before danger of frost at the rate of 12 to 16 pounds of shelled nuts per acre. The pigs may be turned on the pasture as soon as the nuts are well formed, in which case they eat some of the foliage as well as the nuts. Peanut pasture will furnish grazing for about two months and with a small amount of corn to prevent the pork from becoming soft, will make gains of over a pound per head each day.

Cowpeas.

Plant this legume in July for fall grazing. Sow in rows at the rate of 3 to 4 pecks per acre. This gives op-



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portunity to cultivate and prevents trampling of the plants by the pigs. Cowpeas should be grazed as soon as the first pods formed contain peas in the dough stage, as there is no uniformity in the ripening of the peas. Much of the food value is in the leaves. When cowpea pasture is supplemented with a small amount of corn to balance the ration the rate of gain is approximately one pound per head each day.

Plant this crop shortly after corn planting time to pasture in from 90 to 120 days depending upon the variety. The culture is similar to that for cowpeas. Soy beans should be more mature than cowpeas when pastured, keeping the hogs off until the lower leaves turn yellow and drop off and the beans become firm. Soy beans produce more grain per acre than cowpeas and fatten pigs more rapidly and with less corn supplement.

Methods of Enriching The Soil

(Continued from page 1)

even without expensive equipment. Most of the plant-foods contained in manure are readily soluble; but little rain is required to dissolve and carry them away. If manure is left scattered in an open yard, it is wet through by every rain and the greater part of its plant-food is washed out before the season is over. If manure has to be stored for any length of time it should be so piled that it cannot be leached. This may be done by putting it under cover or by making the pile of proper shape.

Manure is filled with bacteria and fungi which are constantly at work. Some of these tend to make the manure heat, causing a loss of considerable nitrogen. Since these destructive organisms work best in manure that is loose and fairly dry, their action can most easily be prevented by compacting the manure to exclude air and by keeping it moist.

Experience has demonstrated that the best way to handle manure is to haul it out and spread it on the land when fresh. This prevents any serious loss from either leaching or fermentation. Many farmers haul manure to a field and leave it for months in small piles. This is not good practice, since it loose condition allows destructive fermentation to go on readily. Moreover, the leaching of the piles causes an irregular distribution of plant food over the field.

During part of the year there is no vacant land on which manure can be spread; hence, it must be stored. This can be done in special manure pits, under sheds, or in the open yard. Expensive pits do not pay, except in special cases, but simple devices to assist in handling manure are with-

out doubt a good thing. Cement is a good material from which to make pits since it makes possible the saving of all of the liquid. Where the rainfall is heavy a roof over the manure pile is almost a necessity.

If an open yard is used the neatest and most sanitary kind of pile, as well as the one allowing least loss, is a pile with vertical sides and with edges slightly higher than the middle. The manure produced each day should be put on the pile while fresh and should be kept compact and moist. A manure spreader is a great time-saver and makes possible a more even distribution than can be made by hand.

6: Other Dressings for the Land.

On the farm there are many kinds of waste in addition to stable manure that can be put on the land with profit. Fruit growers often find it advantageous to haul back to the land all wastes and fruit that cannot be marketed. Straw that is not otherwise used, and all kinds of crop residues make good dressings for the soil.

Sewage from the farm or from a nearby city can sometimes be had. This makes a very good fertilizer.

II. COMMERCIAL RESOURCES.

1. Nitrogen.

Nitrogen is the most expensive of all the fertilizer elements, and the world's supply of this element in a combined form is limited. Formerly, it was obtained from guano, which is manure and decayed bodies of birds, but this source of supply is now practically exhausted. At present the chief source is the beds of sodium nitrate, or Chili saltpeter, found in Chili. It lies near the surface of the ground in great beds, but is so mixed with rock and earth that leaching out of the salt is necessary before it is ready for market. Nitrogen in the form of sodium nitrate is directly available to plants.

Ammonium sulphate is another important source of nitrogen. In the making of coal-gas by the distillation of coal, a quantity of ammonia is given off. The gas is passed through sulphuric acid, where the ammonia is removed and ammonium sulphate formed. This salt has about 20 per cent of nitrogen. It is possible by means of electricity and in other ways to combine the nitrogen of the air in such a manner that it can be used as a fertilizer. The chief products of these processes are calcium nitrate and calcium cyanide. The main difficulty in the way of using these fertilizers is the lack of cheap power which is required in their manufacture.

Many animal products are used chiefly for their nitrogen. Dried blood, dried flesh, ground fish, tankage, hoof and horn meal, leather meal, and wool and hair waste are all used. The availability of nitrogen in these compounds diminishes about in the order in which the materials are named above. In dried blood the nitrogen is available at once, while in leather and hair it can be used but slowly.

It is probable that in the future proportionately less of the nitrogen required by crops will be purchased in commercial form; more of it will be obtained through the growth of nitrogen-fixing crops.

2. Phosphoric Acid.

Phosphorus fertilizers are obtained from both organic and mineral sources. Bones in various forms are extensively used. Formerly they were used chiefly in the raw condition—both ground and unground. But now most of the bone is first steamed or burned to remove fat and nitrogenous material which is used for other purposes. Fine grinding of bone makes its phosphorus more easily available. Tankage that is relatively high in bone is used largely for its phosphorus; and if high in flesh scraps, it is valuable for its nitrogen. Bone is sometimes treated with sulphuric acid to render its phosphorus more available.

When You Are Ready---Plow

**6
SIZES
A SIZE
FOR
EVERY
FARM
AND
EVERY
CONDITION**

You can do your work on time with an Avery Light Weight tractor. Hot weather or hard ground can't stop you. Wet weather can't put you back long in your work—you can plow day and night to catch up if necessary.

Plowing and preparing the seed bed at the right time is of vital importance. It spells the difference between good crops and poor ones.

You can get an Avery tractor to exactly fit your size farm.



8-16 Avery. \$920 Cash F. O. B. Salt Lake

No matter what size farm you have there is a size Avery Tractor that will exactly fit your requirements. They are built in six sizes from a baby 5-10 H. P. to a large 40-80 H. P.

The five larger sizes Avery Tractors have exactly the same design. They have special strong slow speed motors, with opposed cylinders, valves in the head and renewable inner cylinder walls. They have two speed double drive transmission with special sliding frames, which eliminate the usual intermediate gear, shaft and bearings. No fan, fuel pump, water pump or outside lubricator is used. Also have special equipment for burning kerosene and distillate.

All the features of this wonderful tractor are fully described in the 1917 Tractor catalog. We will be glad to give you a copy.

Write or call on

LANDES & COMPANY

Office & Show Room - 2nd West & So Temple
Salt Lake City, Ut. - Phones Was 830-1012



Practice a Little More Economy

Feed your stock the kind of feed that will produce certain results. You may know just what to expect, if you feed Sunripe Stock Feed—better health, more and richer milk. Economy is also a commanding feature of

SUNRIPE
Stock Feed

Order a supply today and test it under your own conditions. That's the proper way to determine results.

UTAH CEREAL FOOD CO.

Ogden, Utah.





A MAGNIFYING GLASS

reveals the tiny pores and seams in an axle. These rough places are the main cause for friction. Use

MICA Axle Grease

on your axle and prevent friction. Made of the finest grease stock and powdered mica. It fills the pores and gives the axle a bright, hard coating. Does not gum or stick. Sold by most dealers in 1 and 3 pound lithographed tins.

THE CONTINENTAL OIL CO.
(A Colorado Corporation)
Denver Pueblo Salt Lake City
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ZION CANYON

UTAH'S NEW WONDERLAND

ALL EXPENSE EXCURSION \$38.25
FROM SALT LAKE CITY

Including railroad transportation to Lund, Auto's Lund to the Park and return. Lunch at Cedar City enroute both ways. Two nights lodging and five meals at "Wylie Way" Camp. Personally conducted Special party for Zion Canyon leaves Salt Lake July 27th.

For information and reservations apply to Wm. Warner, A. G. P. A. 10 E. 3rd So., Salt Lake City.

Mineral phosphorus is found in several kinds of rock which usually have the phosphoric acid in combination with lime, iron, and aluminum. The presence of the last two elements reduces the availability of phosphorus. Rock phosphates are used in various ways. Formerly the rock was practically all treated with sulphuric acid to form super-phosphate as it is called; but of late years the use of finely-ground raw rock-phosphate is increasing, especially on soils rich in organic matter. The acid phosphate is doubtless more immediately available than the raw rock, but it is also much more expensive.

In making steel from pig-iron, much phosphorus is removed with the slag. This is ground and sold as Thomas, or basic slag. It makes a fairly good phosphorus fertilizer.

Phosphorus fertilizers are rapidly gaining in use since phosphorus is found to be the limiting element of crop growth in many soils and the only source of the element is from commercial fertilizers.

3. Potash.

Most of the potash fertilizers used in the world come from the Stassfurt deposits in Germany. Here a great many minerals containing a high percentage of potassium are found. Some of these are ground and put on the land direct; others are leached with water to concentrate them before they are used. Kainit and silvinit are among the most common of these minerals. The German deposits are very extensive, but the irregularity of the supply in case of national disagreement makes uncertain this source.

Wood ashes have for generations been known to have fertilizer value, which results largely from their potash. They are often applied directly to the land, but are sometimes leached to obtain the potash in a more concentrated form. When the price of potash is high it sometimes pays to gather sage brush and other similar vegetation and burn it for the potash contained in the ashes.

In some countries where sunshine is abundant, sea water is evaporated and potassium obtained by fractional crystallization. The obtaining of potash from a seaweed known as kelp is rapidly developing into an important industry in the United States. This will probably become one of the chief sources of this fertilizer.

Many rocks, such as orthoclase, feldspar, and alunite, contain a comparatively high percentage of potassium, but methods of making it available have not been perfected. There are, however, a number of plants which extract potash from alunite commercially.

4. Lime and Indirect Fertilizers.

Many soils, particularly in humid regions, have an acid reaction which is not conducive to the best growth of most crops. It is necessary to neutralize the acidity before such crops as alfalfa and clover will thrive. This is best done by some form of lime. Burned lime has been used very extensively, but it is gradually giving way to finely-ground limestone which is much easier to handle. The effectiveness of limestone depends to quite an extent on the fineness of grinding. The quantity to apply varies greatly with different soils, but much larger quantities are required than of the other fertilizers.

Gypsum or land plaster, which is another calcium compound, has been used extensively in many places, but its use is decreasing except where it is employed in improving the tilth of a heavy clay soil and for other indirect purposes.

Common salt, soot, iron sulphate, and a great number of other substances have been used, and while it may be advisable to use some of these materials in special cases their use is not to be encouraged since they add no direct food to the soil, but act only as temporary stimulants.

5. Value of Commercial Fertilizers.

In the United States more than one hundred million dollars are spent every year for commercial fertilizers. Considerable of this is wasted because the farmers do not thoroughly understand the fertilizer needs of their soils nor the nature of the fertilizer materials they are buying. In spite of this waste, the crops of the country are increased in yield by the fertilizer many times the value of the money spent.

On some of the poorer soils of the South and East it is impossible to raise a profitable crop without the application of fertilizers. On many soils, which give fair yields without fertilizers, their use adds greatly to the profits.

The price of various fertilizers fluctuates so much with market conditions that any fixed price cannot be given. It is also difficult to fix the value by the returns, since each set of conditions yields different returns for the same material.

6. Proper Application of Fertilizers.

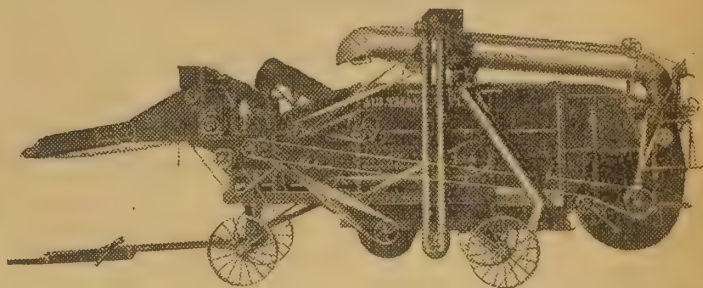
In applying fertilizers, one of the most important problems is to know the needs of the soil and to be able to supply these needs in an intelligent and economical manner. This is no simple task. It is impossible by any single means to say just what is the best treatment for a soil, but by combining the knowledge of science and the wisdom of the practical farmer, a partial solution of this problem can be reached. A chemical analysis of the soil is very useful in determining its needs, but the analysis alone is not sufficient. It must be compared with field tests of fertilizers and with practical tests of crops in order to determine soil needs. Where all this information is brought together and carefully studied a fairly accurate judgment of the soil requirements can be made. The practice of simply applying any kind of fertilizer the dealer may have for sale, without making a thorough investigation, cannot be too strongly condemned.

Many farmers would rather pay more for fertilizers that are already mixed than to take the trouble of mixing them. This is largely because

AULTMAN-TAYLOR

NO GRAIN FOR THE ROOSTER

Thresh your grain with a New Century Thresher and there will be nothing left in the stack for the rooster but the straw. Grain of all kind is selling at too high a price to even think of wasting it. Save all the grain. Do it with a
NEW CENTURY THRESHER



The New Century saves more grain than any other thresher built—because its advanced principles of separation put it in a class by itself. For example, the Universal Rack agitates the straw in the New Century twice with each revolution of the crank shaft. Does the ordinary vibrating type of rack used in other machines do this? No, emphatically no. Then, is it not fair to assume that a rack that agitates the straw twice with each complete revolution of the crank shaft affords better separation than one that agitates it but once? This rack is just one of the many superior features of the New Century. You can learn all about New Century construction by visiting our branch house in Salt Lake City and see one in operation. You'll like it the minute you see it. You'll like it better after you have operated it a few days.

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Branch House, 525 West First South Street

SALT LAKE CITY

CHARLES H. DOBSON, Manager.



SELDOM SEE

a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

ABSORBINE

TRADE MARK, REG. U.S. PAT. OFF.

will clean it off without laying up the horse. No blister, no hair gone. Concentrated—only a few drops required at an application. \$2 per bottle delivered. Describe your case for special instructions and Book 8 M free. ABSORBINE, JR., the anti-septic liniment for mankind, reduces Painful Swellings, Enlarged Glands, Wens, Bruises, Varicose Veins; allays Pain and inflammation. Price \$1 and \$2 a bottle at druggist or delivered. Made in the U. S. A. by
W. F. YOUNG, P.D.F., 142 Temple St., Springfield, Mass.

Save on a TRACTOR!

Guaranteed by Galloway!

Has everything you want and demand on a tractor and saves you money, because you buy direct from the manufacturer. 12 full H. P. on draw bar, 20 H. P. on belt, four-cylinder, water-cooled, long-stroke, modern motor. By actual test requires only 13.3 per cent of motor's power to propel itself, delivers at the draw bar 86.7 per cent of the motor's efficiency. Pulls easily three 14-in. bottoms 8 to 9 in. deep in clover or timothy sod. Unexcelled for road building. Will do any portable engine job. **FREE Book** for the book that tells all and explains my money-saving system. **Wm. Galloway, Pres., WM. GALLOWAY CO., 1575 Galloway St., Waterloo, Ia.**

GET MY PRICES

I can ship at once any size or style WITTE High-Grade Engine—2 to 22 H.P.—Kerosene or Gasoline—Stationary, Portable or Saw-Rig—ready to run—Guaranteed 5 Years. You don't have to wait 6 to 8 weeks for a WITTE. You save \$25 to \$100. Choice of engines. Cash or Easy Payments. My Free Book "How to Judge Engines," by return mail.—Ed. H. Witte, Pres., **WITTE ENGINE WORKS, 3060 Empire Bldg., Kansas City, Mo. Pittsburgh, Pa.**

DAISY FLY KILLER



placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Made of metal, can't spill or tip over; will not soil or injure anything. Guaranteed effective. Sold by dealers, or 6 cent express prepaid for \$1
HAROLD SOMERS, 150 DeKalb Avenue, Brooklyn, N.Y.

they do not realize how much more they pay for various elements when purchased in the commercial brands of fertilizers than when obtained as the simple fertilizing materials such as sodium nitrate, acid-phosphate, and potassium chloride.

Fertilizer manufacturers possess no special secrets that cannot be learned by any farmer who will give the subject a little study. It is poor policy to pay hundreds of dollars every year for fertilizers about which nothing is known except what is told by the salesman. Better economy leads the farmer to spend a few dollars buying books on the subject, as the information obtained from one book may make possible the saving of from 25 to 50 per cent of the fertilizer bill. Any farmer can at very little expense prepare a place in which to mix fertilizers; then, by purchasing the materials best suited to his condition, he can mix them himself and obtain a much more effective fertilizer at the same expense.

While each crop uses exactly the same plant-food elements, the relative quantities used by different crops vary. Potatoes and sugar beets use relatively large quantities of potassium; the grain crops require considerable phosphorus; while the legumes use relatively more lime and nitrogen. Each crop has different rooting habits. These facts must all be taken into consideration when applying fertilizers. In pastures an early growth of succulent forage is desired; this calls for the application for some form of available nitrogen. The needs of each soil and crop and quality of product desired should be carefully studied before deciding just how to fertilize.

WHERE HE GOT THEM

"Little girl, why aren't you provided with an umbrella?"

"Because father hasn't been to church this year."

CARE OF FARM MACHINERY

(Continued from page 7)

out as wear out. This is just as true of the binder and mower as it is of the plow. The life of the former is less than that of most other farm machinery. The working parts have, of necessity, to be lighter and consequently wear and rust will destroy their usefulness in a much shorter time than would otherwise be the case. We must guard against this decline in value as best we can and oil or grease will be found a most valuably ally in doing this.

It is poor economy to try to save grease, and it is very important before putting a machine in operation to see that every part is working free and easy. If a machine is not to be used for a while, all the oil holes and bearings should be thoroughly cleaned with gasoline, then an application made of a mixture of lard and kerosene, having the proportions so that the fluid will permeate all the parts and then harden. This forms a coating over the metal that prevents rusting, leaving the machine in first-class condition and in good shape when wanted for use.

Rust and grease are never found together on a part of a machine, neither are rust and easy running qualities found together. Consequently it should be the determination of every user of any kind of machinery to use plenty of material to guard against rust and also to protect the wearing qualities of his farm equipment.

MORE COWS, MORE CREAM

A farmer of the olden type was inveighing against cream separators.

"I tell you they ain't no good!" he said.

"But," replied his more scientific neighbor, "they do save cream. You can make more butter. Anyone will tell you that."

The farmer was not to be convinced. "If I wanted to get more cream," he said, "I'd rather get another cow."

Government Crop Report

A summary of the July crop report for the State of Utah and for the United States, as compiled by the Bureau of Crop Estimates (and transmitted through the Weather Bureau), U. S. Department of Agriculture is as follows:

Winter Wheat.

Utah.—July 1 forecast 5,330,000 bushels; production last year (December estimate) 5,000,000 bushels.

United States.—July 1 forecast 402,000,000 bushels; production last year (December estimate) 481,744,000 bushels.

Spring Wheat.

Utah.—July 1 forecast, 2,590,000 bushels; production last year (December estimate) 1,900,000 bushels.

United States.—July 1 forecast 276,000,000 bushels; production last year (December estimate) 158,142,000 bushels.

Oats.

Utah.—July 1 forecast 4,950,000 bushels; production last year (December estimate) 4,480,000 bushels.

United States.—July 1 forecast 1,450,000,000 bushels; production last year (December estimate) 1,251,992,000 bushels.

Barley

Utah.—July 1 forecast, 1,410,000 bushels; production last year (December estimate) 1,224,000 bushels.

United States.—July 1 forecast, 214,000,000 bushels; production last year (December estimate) 180,927,000 bushels.

Potatoes.

Utah.—July 1 forecast, 3,860,000 bushels; production last year (December estimate) 3,600,000 bushels.

United States.—July 1 forecast, 452,000,000 bushels; production last year (December estimate) 285,437,000 bushels.

All Hay.

Utah.—July 1 forecast, 1,359,000 tons; production last year (December estimate), 947,000 tons.

United States.—July 1 forecast, 103,000,000 tons; production last year (December estimate), 109,786,000 tons.

Sugar Beets.

Utah.—July 1 condition 100 %; compared with the ten-year average of 92%.

United States.—July 1 condition 92.4 %; compared with the ten-year average of 89.5%.

Prices.

The first price given below is the average on July 1 this year, and the second, the average July 1 last year.

Utah.—Wheat, \$231 and 86 cents per bushel. Corn, \$224 and 85 cents. Oats, 96 and 51 cents. Potatoes, \$250 and 111 cents. Hay, \$20.00 and \$14.00 per ton. Eggs, 30 and 20 cents per dozen.

United States.—Wheat, 220.1 and 93.0 cents per bushel. Corn, 164.6 and 75.4 cents. Oats, 68.9 and 40.4 cents. Potatoes, 247.9 and 102.3 cents. Hay, \$14.56 and \$12.09 per ton. Cotton, 24.7 and 12.5 cents per pound. Eggs, 28.3 and 19.7 cents per dozen.

Crop Summary.

Ranges and stock in excellent condition. The harvesting of a very heavy crop of alfalfa is just being finished. Grain prospects are still very good though some of the dry farms are in need of rain. Potatoes and vegetables are looking well with an increased acreage. Sugar beets are in good condition generally, though the scarcity of labor has handicapped many farmers. The strawberry crop is shorter than expected. Plums and apricots promise a full crop. The heavy fall of apples and peaches is causing some apprehension among growers but so far it has not reached serious proportions.—Miner M. Justin, Field Agent for Utah.

Weather Summary.

The weather during the early part of June was a continuation of the cool backward conditions that had characterized the entire spring in Utah; but from the middle till the close of the month temperatures ranged well above normal and a notably rapid de-

velopment resulted in all crops and vegetation. There was no rain of agricultural importance after the first decade and dry land crops were beginning to need moisture. Light frost was noted in some gardens and truck patches between the 10th and 14th. The mean temperature for 77 stations was 62.0 degrees, which is about 1.4 degrees below average. The average precipitation for 110 stations was 0.14 inch, or 0.58 inch below the average, being one of the driest Junes of record. Eighteen of these stations reported no rain, and 17 reported only a trace.—J. Cecil Alter, Meteorologist.

Weekly Weather-Crop Summary for Utah.

During the past week ending July 10, there were light scattered showers in various parts of the State, which were of benefit locally, but were insufficient to break the prevailing drought. The earlier dry farm grain is heading and promising fairly well, but in some localities the later grain is suffering from the drying weather. Ranges are also in need of rain. Beets, potatoes, alfalfa, and all irrigated crops made good progress during the week. The second crop of alfalfa is starting well. Reports from the southern counties are especially favorable, and all crops there are in excellent condition. Cherries are ripening rapidly, and plums and apricots promise a full crop.—J. Cecil Alter, Meteorologist.

THE FIGHT ON WEEDS

The fight on weeds should begin as soon as it is possible to distinguish easily between them and the plants. It is even possible to do much effective work in killing weeds between the rows before the young plants make their appearance, provided the exact location of the planted seeds is marked.

You should choose a bright, sunny day for weeding. At such a time even weeds which are only partially severed from their roots will have little chance of surviving the withering rays of the sun. If weeding operations are conducted on a cloudy or damp day, however, many of the weeds that are incompletely severed will take fresh growth.

Weeding does more than free the farm of undesirable plants. The digging incidental to removing the weeds also serves as a cultivation. As soon as the weeds have been dug up the roughened ground should be carefully smoothed with a rake. This will incorporate air in the soil, form a dust mulch which will aid in preventing the loss of moisture through evaporation, and will tend to bring to the surface and expose to the sun weed roots and sprouting weed seeds which otherwise might produce plants.

AS IT SOUNDED TO HER

An Englishwoman went into an egg store and asked for fresh eggs. "Yes, mum, plenty," said the shopman; "them with a hen on 'em are fresh."

"I don't see any with a hen on them," said the lady, looking around for a nest.

"The letter 'hen,' mum, not the bird. 'Hen' stands for noo-laid, mum."

PLOWING CONTRACT 2,000 acres

We will let a Contract for plowing about 2000 acres of land, to the right man at the right price. Work to start as soon as possible. Call on or address

**Delta Land & Water
Company**
Delta, Utah.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

\$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

\$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enormous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reaper hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful berry, also the grand prize contest.

H. A. PINEGAR

Wellington

Utah

IDAHO RANCH BARGAIN

160 Acre cattle ranch, 4 miles from county seat, railroad, etc. All splendid farming land, running water, 50 acres good wheat, 60 acres national meadow, fair buildings. Price \$4,700. Good terms.

FEDERAL LAND COMPANY

Ogden

Utah

An opportunity for the right party is a fifty-acre farm at Elberta, Utah, suitable for the growing of alfalfa, fruit, beets, grain, garden truck or any other farm products. The best kind of soil, with good water right at a reasonable rate. This property adjoins a good school and is located on a railroad. Will take \$3,750 for this place, with suitable terms for payment. This is a real buy for the man that wants a small farm at a good price.

For \$75.00 an acre you can buy 50 acres of Elberta's fertile land, with prior water right at \$1.00 an acre. What do you think of this buy. If you are looking for a small farm at a low price, investigate this further. We will be glad to furnish you with more information.

We are dealers in farm lands. Write us your wants.

W. C. ALBERTSON

604 Dooly Bldg.
Salt Lake City

COMBINED GRAIN AND CATTLE RANCH

Here is an opportunity for some farmer with a small farm and a growing family to make a turn that will make them all wealthy. Two business men, living in Salt Lake City, have been trying to run a ranch by mail. They have decided that they cannot make it pay and now are willing to make the right party a fine proposition. If you have some cash, or if you have a small farm, that you desire to turn in for a first payment, here is the chance of a life time.

The ranch is located within 50 miles of Salt Lake City. It is 2 miles from a R. R. Station on main line, the State Highway passes, the school, church, store, are within 1/4 mile, the telephone line pass, and the Forest Reserve is within 2 miles.

The ranch contains 1608 acres, of which 1560 acres are the choicest kind of "Bench Lands," ideally adapted for "Dry-farming." 600 acres of the "dry-farm" land is cleared and being tilled. There is 48 acres fertile irrigated land with primary water right. The improvements are a 6 room log and frame house, stables, corrals, sheds, granaries, extra good fences, wells, windmill, and 30 acres alfalfa. The personal property consists of a Reg. 7 year old Percheron Stallion, 12 horses and mares, 16 cattle, hogs, chickens. Case Tractor Engine (steam), and full complete outfit of implements, wagons, etc.

The whole proposition can be had for \$18.00 per acre, or \$30,000.00. They want enough cash to make them safe, and will give 10 years on balance at 6 per cent. If you want to trade in other property, let us hear from you.

BURT & CARLQUIST COMPANY
Was. 350 No. 40 So. Main St.
"See Us About Real Estate."

RELIABLE FARM BARGAINS

\$450 per acre will buy one acre of first-class garden land. On the 5-cent car line, immediately adjoining the city on the south. This land can be had for a small payment down and a long time on the balance. If you are living in the city and want to get out in a suburban home, this will appeal to you.

40, 80 or 160 acres in southern Idaho. The soil in this tract is first class and there are four acre-feet of water per acre, the maintenance on the water being very low. It is located on the Oregon Short Line railroad and the state highway passes through the tract. The price of this land ranges from \$60 to \$100 per acre and can be sold for 10 per cent of purchase price and ten years on the balance at 6 per cent interest on deferred payments. If you are interested in purchasing a farm, investigate this proposition. We will gladly mail you a folder giving full details about this property upon request.

700 acres of land in Cache valley, which we consider to be some of the best soil in that district. We have purchased this under such conditions that we can resell at a very low price and on very easy payments, 10 per cent at time of purchase and ten years on the balance at 7 per cent interest. If you are looking for a farm, we would advise you to investigate this property before purchasing elsewhere.

We have recently come into possession of several of the choicest farms in the Bear River valley. We are now offering these farms at a price of from \$135 to \$200 per acre, depending upon the location and the improvements. This land is all under a high state of cultivation and is all under irrigation from the Bear River Valley canal. It can be had for a 10 per cent down payment and ten years on the balance at 7 per cent interest.

SPECIAL NOTICE—If you don't see what you want in this list, come in, or write and tell us what you are looking for. We can get it for you and save you money. We trade farms for city homes.

KIMBALL & RICHARDS

"Land Merchants,"
52-54 Main Street,
Salt Lake City, Utah.
Phone Was. 963.

FARM AND RANCH DEPARTMENT

FREE FARM LANDS

The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB Delta, Utah

A CATTLE RANCH WITH CATTLE
280 Acres. Good soil. Independent water right. Fully equipped, with buildings and machinery. 160 acres now in grain, alfalfa and potatoes, balance in first class meadow and pasture. This property is located in southern Utah. It is off the Railroad as every good cattle ranch ought to be. 50 head of cattle go with the place. If taken at once the owner will include the crop and the cattle in his price of \$50.00 per acre. You will have to act quickly if you take advantage of this bargain. It can easily be made worth \$100.00 per acre. Terms.

ASHTON JENKINS COMPANY

47 Main Street,
Salt Lake City, Utah.

MILLARD COUNTY FARMS!
I have an eighty acre improved farm that can be bought for \$50.00 per acre on easy terms. The soil is especially adapted for the production of alfalfa and sugar beets. See me for bargains.

NELS L. PETERSON

Deseret

Utah

Good Seed--The Problem

(Continued from page 3)

pound of seed sown, or 9,900 to the acre. Another lot of good looking seed tested 3,000 to the pound, which is 45,000 to the acre, while a particularly poor lot introduced 5,000,000 to the acre. If 4-5 of these grew there would be introduced nearly one hundred weeds to each square foot of soil in the entire field. Little else could exist on the same area.

Besides, weeds particularly troublesome are often introduced in poor seed. Canada thistle, Russian thistle, bindweed, tumbling mustard, or dandelion may creep into field or garden any time unless the farmer inspects seed, irrigation water, and manure or hay brought from a distance. A keen look-out for weeds that are extremely troublesome pays, because they are much more easily kept out than eradicated. All of these losses are serious. Anywhere from slight injuries to a loss of the entire crop may result. In some instances a particular weed has compelled a farmer to stop growing some crops.

Interest in Good Seed.

Good seed interests the community in a number of ways.

- (1) It keeps better.
- (2) It germinates sooner.
- (3) The crop grows faster.
- (4) The plants are more healthy.
- (5) As a result, greater yields and better quality are secured.

Some seedsmen admit they carry poor seed, but maintain that they must do so because it pays better than the more expensive "high grade." In most cases, however, our seedhouses are doing their best to promote a cleaner and a more healthful condition.

Too many persons buy seed without knowing what they ought to buy, and much less what any given sample contains. A rather general lack of information about seed prevails. Both business man and farmer sometimes lack knowledge. Too often even the scientific worker is in the dark. More study of seed is needed.

Methods of Improvement.

In this as in any work, two general methods prevail. They are (1) education of the people and (2) compulsion by law.

Compulsion alone can never succeed for a number of reasons. (1) Co-operation so necessary to real success is lacking. (2) Intelligent effort which promises the most far-reaching results does not operate. (3) Nearly everybody resents compulsion unless he understands the reason and acknowledges the justice of it. On this account seed laws fail in many cases. Often, too, the enactments are not wise in all their provisions, because, as already pointed out, there is a general lack of wisdom, if not of information, in regard to seed. Legislators have not always written the best possible seed laws. In some cases they have delayed advancement by unwise provisions or by using undue restraint. When such conditions arise, the statutes not enforced become useless, doing not only no good but sometimes actual harm.

The desirable means of bringing about better seed conditions is by laying the problem before the people, giving them what facts are available, and procuring their co-operation in solving the problem. Let once the spirit of betterment get well on foot, and it will accomplish considerable. In such cases improvement will advance in three ways: (1) By a healthful attitude toward better seed; (2) by a careful testing of seed to find out whether it is satisfactory; and (3) by a selection of seed from the field, in order that positive improvement may come. Testing is only a negative factor which rules out the undesirable, but which does not introduce the desirable. The first remedies are to select whenever possible in order to get the best, and to test always in order to keep out

the worst. Only public broadmindedness can secure these results by encouraging farmers, gardeners, and florists to be satisfied with nothing but the best within reach.

If everybody were well informed and also interested in seed problems, it would not be long until we should be well on our way towards a proper solution. Just what is the seed situation in Utah? Here is one difficulty at the very outset. No one knows exactly—perhaps not even closely. In order to be interested in anything, a person must know something about it. Conversely, in order to find out much about a problem, the investigator must be interested in it. Until recently the seed situation not only in Utah but throughout the West was in an alarming condition; people were not interested because they had no accurate information; no investigations were likely to come until somebody was sufficiently interested to start them.

Seed-houses.

Things might in this fashion have gone on almost indefinitely, had not a cause of interest sprung up. This cause happened to be a commercial one, and hence it was given consideration. A few years ago, the need for seed merchants manifested itself in a degree intense enough to cause a number of seed-houses to begin business. It is human to be dissatisfied with the quality of purchased product when its poor quality would not occur to the consumer if he grew it himself. Take hay, for example. If a farmer's alfalfa contains some barley-grass or June-grass (*Bromus tectorum*)—sometimes called cheat-grass—he feeds it without worrying, probably without thinking of the injury in quality caused by the grass. Let someone offer to sell him such hay and he sees at once the likelihood of loss in its barbed seed or in its smaller feeding value. So it was with seed.

No sooner had the seed-houses become established as permanent institutions, than they began to call attention to impurities and other weaknesses in the seed they purchased; likewise the farmers who bought from them began to foresee possible loss due to the presence of foreign substances and immature or injured seed in the samples offered for sale. Soon a rather critical attitude in regard to seed became popular, and some laws, as stringent and unwise as they were hasty, found themselves in the law books of one or two of the western states. A few of the seed laws were good, but, with some over-stringent and others non-applicable to the conditions, a natural reaction set in. Popular opinion and necessity, in some cases, caused such regulations to be so neglected as to become "dead letters." Then the development began again—slowly, and as new information dictated. This was the proper course. It has therefore gained considerable momentum and now promises to end in a wise solution of at least some of the problems related to seed.

Growth of Interest.

One of the causes for the growth of seed-houses was the market for seed outside the State. Buyers of Utah seed naturally took some protective measures against noxious impurities and poor condition. This of course was a spur to the seed merchants and has done considerable to quicken interest in good seed. Semi-quarantine laws and inspection operating in various localities have further increased the attention given to shipments outside Utah. These restrictions have had two effects, as they must have anywhere under the condition of restriction without and absence of inspection within. (1) Only the best seed is shipped out, leaving the lower grades for the unprotected home markets. (2) Only the better seed would be bought off the

farms, leaving the poorer for replanting. This created a condition that would become constantly worse and worse had not a disturbing factor appeared. This disturbing factor was the State Experiment Station which began a campaign for seed improvement. Co-operative tests of varieties and strains were quickly followed by encouragement from the Agricultural College through Farmers' Institutes and County demonstrators. At present some instructors in the high schools in co-operation with the College are working to improve the seed situation through their classes and high school agricultural clubs. Such is the seed situation in Utah today; much poor seed is in use, but a newly-created and rapidly-quicken interest has set in action forces that make not only for increased, but also for widespread attention to seed. The situation is much in need of improvement but is not without hope.

The first means of seed improvement—the creation of a healthful attitude—is already in action. This of course is requisite to the other two,—testing and selection. There is no reason why all three methods should not be operating at the same time. In fact, it is almost impossible for one method to reach the fullest possibilities without help from the other two. Now since the attitude is right, persons should proceed intelligently to test and to select seed.

Let us also bear in mind that the seed problem in Utah is not solved, as yet we hardly realize to what proportions it may grow. It is especially pregnant under of present scarcity of food and freshly awakened interest in food production. The seed problem is worthy of attention. Here the first steps toward improvement must be taken if they are to be taken at all.

—0—

SHEEP IN THE ORCHARD.

Utah Farmer:

We have an 8-acre apple orchard which is considered to be one of the best in the state. Would you advise us to run sheep in it? We have sowed part of it in Red Clover. Would they be detrimental to the trees?

J. H. W.

Answered by Dr. G. R. Hill, Jr.

Sheep could get considerable feed from such an orchard but if the orchard is cropped too closely by them or if the branches of the trees come low they will eat off the leaves and injure the lower limbs of the trees considerably. If the trees are headed rather high and if you do not pasture the orchard too closely they would not do so much damage. Hogs can be pastured in the orchard to much better advantage so far as the trees are concerned.

—0—

Utah Farmer:

What are legumes?

C. R. J.

Answered by Dr. G. R. Hill, Jr.

Legume is the popular name given to a very large group of plants comprising herbs, shrubs, vines and trees. All of the legumes which are cultivated as farm crops belong to the pea family and may be recognized by the flower which is usually very similar in shape to that of the garden pea and by the fruit or pod which is similar to that of the pea or bean. The pod may be much smaller as in sweet clover, or curled as in alfalfa, or it may not split open to discharge the seed as for example the peanut. Legumes are of particular interest to the farmer because they enrich the soil by accumulating and storing the nitrogen of the air in nodules or swellings on the roots. This is done by the aid of millions of parasitic bacteria which live in the nodules or swellings on the roots. When the roots decay the nitrogen is made available for the use of other plants. Peas, beans, alfalfas, clovers, vetches, cowpeas, peanuts, lupines, as well as the plants producing the loco disease, are legumes.

Farmers' Market Place

DUROC BRED SOWS

We are offering a few choice fall gilts, sired by the Grand Champion Richards Defender, and bred to our new giant herd boar, Richards Pathfinder. We purchased Richards Pathfinder in Iowa last December and he is the largest boar of his age we have ever seen. These good gilts will farrow during August and we are pricing them low, as we need the room.

We guarantee to please you or will refund your money and pay the express charges both ways.

RICHARDS LIVE STOCK CO.

Virginia, Idaho

"Home of the Champion Durocs."

FOR SALE

1100 pound Hambletonian driving mare, 9 years old, harness and one seated top buggy, all in A 1 condition. A bargain.

MRS. W. E. REYNOLDS

Stockton

Utah

FOR SALE

At a bargain one Hart Barr 30-60 tractor, 1915 model, in good working order with gearing new. Horses good as part payment. Apply A. L. Cook, Half Mile West of Lone Rock, 7 Miles West of Tremonton, Utah.

FOR SALE OR TRADE

A Registered Jersey Bull 18 months old or a Registered Jersey Bull 5 years old. Address

UTAH FARMER

FOR SALE

Eight registered Jersey cows. Three registered Jersey bulls. Nine registered Jersey heifers. Nine pure-bred Jersey cows. FRANK M. DRIGGS, Ogden, Utah. Phone 108 Ogden, or 8-J Huntsville, Ut.

WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers.....	\$.90
200 Butter Wrappers.....	1.25
500 Butter Wrappers.....	2.00
1,000 Butter Wrappers.....	3.00

Check or money order must accompany order.

SOAPSTONE

Oakley, Utah.

Utah Farmer:

What is soapstone and where can I get it?

Soapstone is a term ordinarily applied to a dark, bluish gray or greenish rock, composed essentially of talc, but containing other minerals as impurities. It is characterized by its extreme softness, soapy feel and freedom from grit. It is soft enough to be easily cut with a knife.

Soapstone which often forms large masses, is found chiefly in association with older crystalline rocks. It occurs in veins 30 to 165 ft. in thickness and is more prevalent in the extreme eastern states.

The most important uses of soapstone are: Fireproof paints, foundry paint, boiler and steam pipe coverings, soap—adulterants, toilet powder, dynamite, for dressing skins and leather, as a base for lubricants and a filling for paper and for sizing cotton cloth.

Soapstone is sold in general stores or hardware stores.

The Big Packing Plant of the Mountain States

Utah has the largest packing plant west of Omaha. This fact will surprise most of the people of the intermountain country. The plant is owned and operated by the Ogden Packing & Provision Company, and is ideally located on the banks of the Weber River, adjoining the great railroad yards which make Ogden the transportation center of an inland empire.

You will be interested to know that this splendid institution, which has recently been tripled in size, now occupies floor space

totalling 240,650 square feet, or approximately six acres. It has a daily capacity for the dispatching of finished products of 1,250 hogs, 1,500 sheep, 300 cattle. The products of the Ogden Packing and Provision Company—ham, bacon, lard, sausage, a cooking compound, etc.—are recognized for their high quality throughout the inter-mountain states and along the entire Pacific slope. Great quantities of its cured meats have been furnished the allied governments during the great European war.

Buy Ham and Bacon From Your Own Livestock, and Help Build Your Community

With the firm conviction that the mountain states furnished the logical location for a packing plant industry, a few business men of Ogden incorporated the Ogden Packing & Provision Company in 1901, with a paid up capital of \$7500. The first building was erected in 1906. While a very modest structure, it represented a faith in future realization; it was much too large for the number of cattle, sheep and hogs that could then be secured and disposed of.

Standing orders were placed for every hog that the intermountain farmers would bring to this plant. The industry soon established a reputation for its quality products, and the local hog supply became entirely inadequate; it was found necessary to go to eastern markets for additional supply of hogs.

From the inception of this industry, its owners have done all within their power to encourage the farmers of the mountain states in the raising of marketable hogs, sheep and cattle. To begin with, they went so far as to loan the farmers the money with which to buy hogs.

Pioneers in the Hog Industry of the West

These gentlemen may rightly claim to be the pioneers in the hog industry of the intermountain country. As the market developed, and hog raisers learned the profitability of the industry, quite an impetus was given the business. On January 1, 1916, the U. S. government reported 456,000 hogs in Utah and Idaho. This was a tremendous advance from but a few hundred ten years before.

During the first year's operation of the Ogden Packing & Provision Company plant, it handled less than 5,000 head of hogs; its present capacity will permit it to handle 400,000 hogs.

A Genuine Commercial Factor

What this industry means to the people living in Utah and Idaho may be estimated when you know that the major part of all the hogs used now are raised in the local territory, the money for which finds its way into the commercial channels of these mountain states, reacting as a benefit to all its people.

Extensive Stockyard Facilities

As a result of the rapid growth of this packing plant industry, it became necessary to establish stockyard facilities. The Ogden Union Stock Yards, adjoining the packing plant on the opposite bank of the Weber river, to the west, cover 72 acres. They are thoroughly modern, and afford every facility for the exhibiting and selling of livestock. Covered sheds are provided for housing the stock during inclement weather. All the yards are cement floored, providing ample sanitation and insuring the cleanliness and health of animals. Cement drinking trough, filled with fresh, pure water, are in evidence everywhere. The unloading platforms are built on a level with floors of railroad cars, thus eliminating the old-fashioned incline chutes.

There are facilities in these yards for 2,500 cattle, 8,500 hogs and 25,000 sheep, affording the nearest market to all shippers in Northern Utah, all of Idaho, Nevada and Wyoming.

A branch railroad line, from the Ogden railroad yards runs directly into the Ogden Union Stockyards Company property; it is practically a branch of the main lines of transcontinental railroad facilities. An engine can go into these stockyards and draw out an entire train of livestock to the main line of any railroad running into the Ogden junction.

Most Modern Packing Plant in United States

The entire new additions to the Ogden Packing & Provision Company plant, which required a full year to build and equip are of steel and concrete, with brick facing. Being the last packing plant built in the United States, it may be said to represent the last word in modern packing house construction. The recognized expert packing house architects, Henschien & McLaven, of Chicago were the designers. Every known appliance that will insure convenience, speed, safety and economy in the handling of livestock and finished products, has been added to the equipment of the Ogden Packing & Provision Company's packing plant.

Everything that argues for perfect lighting, ventilation and sanitation of the plant has been adopted. Every comfort and convenience necessary for the welfare of 350 employees has been provided. An institutional lunch room is a feature. Here the

employees are furnished whatever they want to eat, at actual cost.

Power for Machinery and Refrigeration.

One entire section of the new building houses the power and refrigeration plant. Three boilers with a total capacity of 750 h. p., furnish all the steam used throughout the plant. Giant electric motors, with a total capacity of 800 h. p., are required for all the manufacturing processes, and for driving the three ammonia compressors, which furnish 175 tons of refrigeration.

The Tank House is a three story structure, with six large steam rendering tanks, used for rendering lards and greases. Tankage presses are also in this building.

The Manufacturing Building is 100 feet square occupies entire space of five floors. This part of the plant provides all the facilities for the killing of hogs, their dressing and cutting, the making of sausage, lard refining, and for the storing of smoked meats, etc. The dressing rooms for employees are also in this building.

The Smoke Houses. There are sixteen in number, erected immediately adjoining the north side of the manufacturing building. They occupy five floors, with a total capacity of 120,000 pounds of smoked meats per day.

The Cold Storage Building is one hundred feet square, on five floors, and is insulated throughout—ceilings, floors and walls—with cork, four to six inches in thickness. This perfect insulation was installed at a cost of \$40,000. The building has a total capacity of five million pounds of cured meats and lard, and contains nine miles of ammonia piping for cooling purposes.

The upper floor of the storage building is used for the hanging of dressed hogs; it has a capacity for 2,500 head. The other floors furnish facilities for the curing, storing and freezing of meats. The freezer compartments may be maintained at five degrees below zero, any day in the year.

The Entire Plant of the Ogden Packing & Provision Company, with the exception of the cold storage facilities, is now equipped to handle 3,000 hogs per day. It is so planned that sufficient additional cold storage facilities may be provided, at comparatively little cost, to enable that unit, also, to care for 3,000 hogs per day, or one million per year. This will be done as soon as the hog supply warrants it.

Two Railroad Tracks intersect the old and the new plants, affording capacity for ten cars per day. This may be increased at will with the present switching facilities.

Government Inspection

Complying with the Federal laws applied to all packing plants conducting an interstate business, the Ogden Packing & Provision Co. plant is fur-

ADVANTAGES OF OGDEN AS A LIVE-STOCK MARKET.

A careful study of the following comparative figures will demonstrate the advantages of Ogden as a Livestock Market for all of the mountain states. The figures show the Receipts, as published, of Cattle, Sheep and Hogs, at the North Salt Lake Stockyards and the Ogden Union Stock Yards, for three months—April 1 to July 1, 1917.

Salt Lake:—13,114 Cattle; 52,184 Sheep; 9,016 Hogs.
Ogden:—31,444 Cattle; 116,589 Sheep; 28,801 Hogs.



MAIN PLANT, OGDEN PACKING & PROVISION COMPANY, OGDEN, UTAH.

nished six officials of the United States Government—four veterinary and two sanitary inspectors. This insures absolute protection to all consumers of this company's products. The word of these inspectors is the law with all employees, as affecting the handling of all livestock—its dressing, finishing and preparation for the market, and the sanitary provisions and precautions exercised throughout the entire plant. They are paid by the government.

"Mountain" Brand Products

Mountain brand goods are just as fine as it is possible for first-class packing house products to be.

Mountain Brand Ham is the kind of ham you like. It is selected from the choicest stock which can be secured from western hogs that have been fed with the idea in mind of producing well balanced meat—not too

fat nor too lean—but plenty of lean and a little fat.

Mountain Brand Sliced Bacon is a genuine breakfast delicacy. It is put up in a sealed box, the bacon wrapped in parchment paper. No rind, no waste—just a full pound of delicious bacon.

Mountain Brand All-Pork Sausage is just a little better than any other sausage you have ever eaten. It is absolutely all pure pork. Nothing nicer for breakfast or luncheon.

Mountain Brand Lard is pure excellent; no lard can be better. It is made from pure leaf lard and choice hog fat, rendered in the old fashioned way (still the best way)—in an open kettle.

The Mountain Brand Label, is a guaranty of the high quality of anything on which it may appear. You should look for it when buying packing house products.

Other Products

In addition to its superfine Mountain brand products, this company manufactures and markets a Nectar brand and a Sego Lily brand of hams and bacon, and a Sego Lily brand of pure sweet lard.

It also manufactures a complete line of dry salt cured and sweet pickled meats, fresh and smoked sausage, and Chefo Compound, a splendid substitute for lard.

Its fresh meats—beef, mutton, pork and veal—are recognized as extra choice by all the trade. When you buy fresh meats just be a little careful and look for the inspection stamp of the U. S. government.

Plants, Markets and Distribution

The manufacturing and main plant of the Ogden Packing & Provision Company is located at Ogden Utah. The company maintains substantial buildings, as distributing plants, at Salt Lake and Price, Utah; also at Los Angeles and San Francisco, California. Sales Agencies are established in Pocatello, Idaho; Rock Springs and Cheyenne, Wyoming; Denver, Colorado; New York and Boston, U. S. A., and in Liverpool and London, England.

Distribution of its products is readily secured by the company's enterprising corps of salesmen, and as a result of its advertising in the various mediums which reach consumers.

Strictly a Mountain States Industry

The business of the Ogden Packing & Provision Company is capitalized for \$2,000,000, represented by 20,000 shares at the par value of \$100. The entire issue is held by people in Utah and Idaho, making this big enterprise, with its international markets, purely a Mountain States industry.

The Men Back of this Institution

Among the men, representative of the true spirit of Utah—the spirit that builds, preserves and improves—who have been and are now the directing force behind the operations of the Ogden Packing & Provision Company, may be mentioned: Yars Hansen, Fred J. Kiesel, James Pingree, Adam Patterson, Charles Ziemer and Simon S. Jensen.

Your Co-operation is Invited.

Anyone who visits this splendid packing plant, or who learns of its magnitude and significance by other means, will be prompted to support it. Be you stock raiser, wholesaler or retailer, or consumer of packing house products, your co-operation is invited to still further develop this industry.

The plant will always be open to public inspection. Visit it yourself and tell your friends to go and see this interesting, healthy and thriving enterprise. Guides are always on hand to escort you.

THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH

JULY 21, 1917

VOLUME XIII; NO. 50

Food Production and Conservation Most Important

"Neither armies nor navies, neither science nor vast supplies of munitions, will decide this war. The conflict has gone beyond all those stages and the battle now is against war's most dreadful handmaiden—famine. Louder than the roar of battle throughout the war-stricken countries of the old world is the cry of the starving. They cannot feed themselves; we must feed them."

This was one of the statements

made by Assistant Secretary of Agriculture Carl Vrooman when he was at Salt Lake City last Saturday. One of the most important parts the American people can take in this war for democracy is the production and conservation of food.

"There is no city or state that is more actively engaged in this great work, and I believe I am safe in saying that not one is doing so much. Utah's increase in crop production will be 25 to 30 per cent and I know of no other state

that will do better, and I believe I am safe in saying that none will do so well. The good women who are doing this great work here in behalf of humanity represent the Red Cross of agriculture, and their work is fully as important as the work of the great Red Cross organization on the battle-field."

Mr. Vrooman came to Salt Lake City with a message and all those who heard him were encouraged to help

in this great work. He visited Fort Douglass called on Governor Bamberger at the State Capitol and President Joseph F. Smith at his office.

He addressed the ladies at the Municipal Market and the business men at the Commercial Club. In the afternoon he met with the County Agents and other representatives of the State and Department of Agriculture.

structural materials are required for the present military emergency.

"For this reason business expansions requiring new machinery and structural steel, which are not actually required to meet immediate industrial and agricultural needs, should be deferred until the war is over or until the steel industry has caught up with demands upon it through military necessities of our country or our allies.

"Any promotion schemes which are

honor he was introduced by Pres. F. C. Richmond. President E. G. Petersen of the Utah Agricultural College spoke briefly outlining the work that Utah is doing in food Conservation and production.

Should Help the Farmers.

In speaking to the business men Mr. Vrooman said:

"In years gone by, 50 per cent of the perishable products of the county were lost either through being permitted to

rot on or in ground or failure to preserve them after they had been harvested.

"But I believe the people of this country are working in the right direction. However the crucial period for this year is fast approaching—the harvest time.

"In former years the transportation facilities have been found inadequate to handle the crops of the country and no one can foretell the result of the enormous increase in crop production. Can the railroads move the crops? I fear not, and it is up to you

as business men to help the farmer in every way possible to market his crops. Unless that is done all the good work of the past few months will be lost.

"This is a task great enough to appeal not only to the patriotism, but to the imagination and compassion, of every man who has within him a spark of devotion to principle and to humanity. For many months we will

(Continued on page 7)



ON ONE OF OUR SOUTHERN IDAHO FARMS.

A conference was held with a number of gentlemen representing the sugar industry and Mr. Vrooman made this statement speaking of manufacturing and food production:

"Food conservation is a vital problem of national and international importance. Yet the conservation of structural materials, particularly of steel, lumber and man power, is almost as important.

"Untold quantities of all kinds of

put forward for any reasons other than meeting real wartime needs should be discouraged at this time in the interest of national efficiency. The business of this nation from now on until we have signed victorious peace, is war. All other considerations must be subordinated to those of military necessity. All ill-advised investments at this time are waste motion."

At the Commercial Club where a dinner was given in Mr. Vrooman

YOUR FRUITS AND VEGETABLES
Sell What You Can---Can What You Can't

SUGAR BEETS

WATER YOUR BEETS

Mark Austin.

The Government report shows that the month of June, 1917, was the driest June on record. This will hold good for July, 1917, up to the present date, as we have had no rain thus far. In addition to this it has been exceedingly hot, requiring more water for the crops than normal, also more cultivation.

In view of these conditions, we want to urge again to all our beet growers the necessity of keeping their beets well watered.

SUGAR'S PART IN THE NATION'S TASK

From "Facts About Sugar"

Sugar, an important article of food in time of peace, is doubly so in time of war, both because of the energy contained in a pound of sugar as compared with a pound of other foods and because the conduct of modern war has developed many additional uses for sugar. Therefore, the sugar companies and farmers would be performing a patriotic duty by increasing the sugar output this season.

The above extract is from an appeal issued by the Secretary of Agriculture during the present week. It is not reproduced here because it contains any thought new to our readers. The same facts have been reiterated many times in these columns. We feel, however, that it is worth while to call special attention to the statement of Secretary Houston in order to direct the attention of the sugar producers of the United States to the importance, not only to themselves but also to the nation, of making their efforts count to the fullest possible degree toward a record production of sugar both this year and next.

The Secretary's remarks addressed primarily to the beet sugar industry since the cane crop of 1917 is already well advanced in the making. While the beet planting season is practically at its end, we are glad to be able to say, from reports received from the various beet sugar companies, that a particular endeavor to increase the beet acreage has been put forth without waiting for any official urging.

Production is not merely a matter of acreage, however. Much depends upon the care and attention given to the work of cultivation and harvesting. It is revealing no secret to say that in years past—every year thousands of tons of sugar in the aggregate have been sacrificed through failure of growers to give sufficient attention to the thinning and cultivating of their beets. Both in the beet and cane industries, there has been much preventable waste in harvesting operations. With the high prices that the beet and cane growers are receiving for their crops they can well afford to devote to them the labor necessary to realize more early the maximum possible output from each acre. And at the same time they can have the satisfaction of knowing that they are doing their bit to aid their country in a war in which economic forces play a part almost as great as purely military strength.

A special opportunity is presented to agriculturists and fieldmen in this connection to see that growers in their sections have the full benefit of their advice and encouragement and that they measure up to the full possibilities of constant and well directed effort to produce the best crop they ever have grown.

While it is important for the grower to do his share by producing larger and better crops the mill and factory has a part to play as well in this great national campaign. Every manager, superintendent, chemist, engineer and other employee can do something toward the avoidance of waste and the increase of efficiency. There is much apparatus that can be

replaced with new to advantage during the next four months; much that needs to be overhauled and tuned up. The study of adoption of better methods and the use of the best obtainable materials will not be wasted effort this year. We recommend for every mill and factory a special campaign, beginning now, to stop leaks and improve efficiency.

Here is the opportunity for every man engaged in the sugar industry to enlist in the national service. It is not a showy task, but one that will achieve solid and important results. We believe that the members of the American sugar industry are fully alive to their responsibilities in this respect. We have heard of many activities that go to show that this is the case. In Hawaii, for example, a special effort is being made to increase labor efficiency by bringing about more regular attendance by laborers who have made it a habit in the past to absent themselves for a day or two a week. We note a suggestion by one progressive beet company to its growers that each one add a single acre to the amount he has planned to devote to beets this year. Another company has established a loan bureau through which it is extending financial aid to the growers in making their crop.

These are wholly practical undertakings and in the sum total they can be made to count greatly toward increased production.

KEEPING THE GAS

TRACTOR GOING

The man with a new machine which he has run a month or so is likely to meet with lessened power or other irregularities. This is not the fault of the tractor as the need of shoeing is not the fault of the horse. Some near troubles that may arise are as follows:

The carbonizing of cylinders is to be expected. This is accelerated by over oiling, poor oil, unfiltered air to carburetor and the use of a mixture too rich in fuel. New machinery requires over oiling so carbon deposits are likely to form quickly in a new machine.

Symptoms of carbonizing are, pounding when pulling hard and over heating.

These deposits may be partially removed at least by injecting into cylinders, alcohol or kerosene but preferably a mixture of the two when stopping at night. The next morning the motor may smoke badly for a while but much of the carbon deposit will be blown out the exhaust.

Loss of compression due to defective valves is a common cause of loss of power and when bad missing. The writer recently visited a tractor which was giving trouble from loss of power. On turning the engine over by hand it was noticed that one cylinder showed almost no compression, while the other showed below normal. The operator was told to listen at the muffler while the engine was turned. He heard the gasses hissing by the exhaust valve and was wiser for next time. The valves both exhaust and inlet were even ground and the engine pulled as at its best—E. W. Hamilton, Agricultural Engineering.

GRAHAM AND WHOLE WHEAT FLOURS

From the American Miller.

The manager of a Western mill fairly new to the technical side of the business writes to inquire by what process whole wheat flour is made and the difference between whole wheat flour and graham. He also gives the formula which his mill is following in making graham, which includes certain proportions of straight flour, low grade, shorts and

When You Are Ready---Plow

6
SIZES
A SIZE
FOR
EVERY
FARM
AND
EVERY
CONDITION

You can do your work on time with an Avery Light Weight tractor. Hot weather or hard ground can't stop you. Wet weather can't put you back long in your work—you can plow day and night to catch up if necessary.

Plowing and preparing the seed bed at the right time is of vital importance. It spells the difference between good crops and poor ones.

You can get an Avery tractor to exactly fit your size farm.



8-16 Avery. \$920 Cash F. O. B. Salt Lake

No matter what size farm you have there is a size Avery Tractor that will exactly fit your requirements. They are built in six sizes from a baby 5-10 H. P. to a large 40-80 H. P.

The five larger sizes Avery Tractors have exactly the same design. They have special strong slow speed motors, with opposed cylinders, valves in the head and renewable inner cylinder walls. They have two speed double drive transmission with special sliding frames, which eliminate the usual intermediate gear, shaft and bearings. No fan, fuel pump, water pump or outside lubricator is used. Also have special equipment for burning kerosene and distillate.

All the features of this wonderful tractor are fully described in the 1917 Tractor catalog. We will be glad to give you a copy.

Write or call on

LANDES & COMPANY

Office & Show Room - 2nd West & So. Temple - Salt Lake City, Ut. - Phones Was. 830-1012

bran, and asks if the proportions employed are the usual amounts.

The only appreciable difference between genuine graham and genuine whole wheat flour is the differing degrees of fineness to which the bran is reduced. The Bureau of Chemistry of the Agricultural Department wisely declines to make any distinction between graham and whole wheat flour. For graham is "unbolted wheat meal," and that is exactly what genuine whole wheat flour would be. To distinguish between the degrees of fineness to which the bran might chance to be reduced in the two, would be folly. There are as many kinds of graham and whole wheat flours so-called, almost as there are mills producing them. According to governmental definitions there is only one way to make these flours, and that is to reduce wheat to meal or flour, and all of the wheat, and bolt out none of it. All flours made by formula or those from which some part of the wheat is excluded, are, in the eyes of the Bureau of Chemistry, imitations or compounded, but any flour not containing the whole of the wheat should not be sent out of the state branded as graham or whole wheat flour.

It may seem a little harsh to call an article "imitation graham," that is really better than the genuine article, we think the formula followed by our correspondent would produce an article more satisfactory to the average consumer than genuine graham would be. But with the wide variation of content in compounded graham, where could a start be made toward standardization? LeClerc and Jacobs, in their investigations, found that in 13 samples of graham, the bran ranged from less than 1 per cent to 18.8 per cent. In shorts, 80 samples ranged from 3.3 per cent to 37.2 per cent. Middlings ranged from 0 to 30 per cent.

There is no standard possible with compound flours, unless the miller runs all the mill streams together. This would make a real graham, but by a roundabout method, since two reductions on rolls or one on a millstone is sufficient. Many, perhaps most of the compounded grahams and



A RELIABLE ball in your twine can means money in your pocket. The other kind means wasted twine and serious delay.

Every man knows this. The thing is to find the reliable kind.

Plymouth Twine

has satisfied thousands and will satisfy you. It does not tangle or fall down, and it's even in size.

Plymouth runs full length and ties more bundles than other brands. Buy it this year and order early.

We sell it.

CONSOLIDATED WAGON & MACHINE CO.
UTAH IDAHO WYOMING NEVADA

whole wheat flours, are not intended to deceive, but to be a superior article, by leaving out some of the bran and shorts. So long as compounded grahams are made, the only rule to follow is to make what suits the taste best. There is no "usual" formula; there can be none.

Sent in your orders for Butter Wrappers to the Utah Farmer.

Relation of Drainage To Food Production

R. A. Hart, Senior Drainage Engineer, U. S. Department of Agriculture.

The entry of this Nation into the world war has developed a great activity in the reclamation of lands by drainage and when a little thought is given to the matter, it is not hard to see the reason.

There is probably no way in which more land may be restored to, or developed into, a producing condition than by the reclamation of lands that are now more or less unproductive because of excessive moisture. Stated another way, there is no way in which the food supply can be developed and increased more rapidly than by drainage reclamation.

While this is generally true, it is especially the case in the irrigated section of the country. An alarming proportion of the lands that have been brought under irrigation are now in a non-producing or partly-producing condition, due to an accumulation of an excessive amount of water, resulting in a waterlogging of the soil or an excess of alkali salts, which is an accompanying evil in most irrigated sections.

These lands are the cream of their respective sections and possess many advantages over lands that must be developed by new irrigation activities. As a rule they are the tracts that were first taken up, not only because they represented the choice areas but because of the ease of irrigation, leveling, etc. These lands have been leveled; the brush removed; irrigation ditches constructed and cultivation has actually been carried on, often for years. The tracts are fenced, buildings have been provided, highway and railroad facilities have been afforded, markets are near at hand and are well developed and as a rule the owners have other tracts now in a producing condition so that a living can be made while reclamation is under way, and in most cases, the cost of reclamation of the tracts in question can be borne by the producing areas. The lands have the further advantage of a nearby labor market and social advantages.

Last, but not least, the reclamation of over-irrigated lands by drainage can be accomplished at less cost than that of irrigating new lands. The average cost of draining lands is about \$20 per acre while the average cost of irrigating new lands is about \$60 per acre. Besides this difference in cost, there are fewer and less expensive auxiliary operations to be carried on in connection with drainage reclamation.

Lands that are merely injured by waterlogging can be reclaimed in a matter of days but lands that are injured by an accumulation of salts will require operations extending over weeks. In any event, most unproductive lands coming under either class may be reclaimed in time to grow satisfactory crops in 1918. In connection with this statement, it should be impressed that drainage alone will not accomplish reclamation

of alkaline lands. The removal of salts calls for the forcing through the soil of a sufficient quantity of water to dissolve and leach out the salts. This requires vigorous cultivation and the application of large quantities of water in the proper way.

Drainage activity at the present time is developing along two distinct lines, individual reclamation and community reclamation. In the latter connection drainage districts, organized under the state laws, are being formed in large numbers throughout the west. These districts include all the way from a few hundred to 20,000



The Utah Experiment Station pastures are not overgrazed. A properly cared for pasture is the cow's idea of heaven and a heaven to her means a bankroll to the farmer.

acres each. Organization, preliminary investigations and actual construction work are progressing as rapidly as possible. The Department of Agriculture is assisting in every possible way with this organization.

The activity along individual lines is equally marked. The Department at the outbreak of the war, recognized the fact that more immediate results would flow from individual efforts than from community efforts and although the assistance given to the large projects has not been decreased in any way, a special department was created in the Salt Lake office to afford all possible assistance to individuals who might desire to redeem their unproductive areas. Since this department was created, a half-hundred requests have come in and every attempt is being made to take care of these requests. In this work surveys and sub-surface examinations are made, drainage systems planned and laid out and advice given to the owners as to best methods of construction. Inspection of construction work and further recommendations are given from time to time. All this service is given free of charge to the farmer.

The drainage of irrigated lands is a highly scientific matter and the installation of drains by landowners without proper engineering investigation and assistance generally ends in failure or only partial success and

Caring For Pastures--- Prepare for 1918 Wheat Crop

By Dr. F. S. Harris Director of Experiment Station.

During the period of the war all animal products are going to be scarce. For many months the newspaper dispatches from the warring countries of Europe have told of the shortage of meat, fat, and all kinds of foods derived from livestock. Some very shocking stories have been told of the means resorted to by Germany to secure the animal fat necessary to maintain the country and prosecute the war. The lesson we may get from this condition is that every kind of forage must be used with the utmost economy and every possible means must be devised to increase

others are more vigorous later. Those having different growing periods should be so mixed that there will at all times be fresh feed. Some grasses are naturally more tender and palatable than others. These will be cropped too close and gradually killed if the pasture is overstocked. To avoid this condition it is a good thing to rotate the grazing which makes it necessary to divide it into two or more fields. If this is done it is also possible to remove the animals from the field while it is being irrigated.

Thistles and other undesirable weeds gradually get into pastures reducing the yield of grass and causing considerable annoyance. These can usually be controlled by mowing the pasture one or two times during the season. The mowing also cuts any bunches of coarse grass left by the animals.

A number of pastures have recently been observed where not more than half the area was being grazed. The rest was grown up to coarse unpalatable grass and weeds. The grass that was being eaten was cropped too close for its best growth. A mowing would have corrected the bad condition.

Bunches of grass are tainted by droppings from the animals and are not eaten. This gives the pasture a ragged appearance and results in considerable waste of feed. Running over the pasture once in a while with a brush drag or harrow overcomes this difficulty. By caring for the pasture the same as any other crop the farmer may greatly increase his livestock products and thereby help the nation in its fight for the liberty of mankind.

PREPARE FOR 1918 WHEAT CROP

It is now evident that if the war continues there will be a great scarcity of bread-making material in the world. In Europe bread has been rationed out to the citizens for over two years. In America we have not yet felt a shortage except as this condition is reflected in the high price of wheat and flour. Now that we are actually at war, however, each citizen will have occasion to know the value of bread. Already the slogan of "a wheatless day each week" has been sent out.

This all means that wheat and flour will be at a premium for some time. Even if the wheat crop of America should be very large, and excess could readily be absorbed by the starving millions of ravished Europe. It is absolutely impossible during the period of the war to produce more bread stuff than can be used to good advantage.

When the war was forced on us last spring the farmers knowing that wheat would be high planted every available acre. Considerable land that had not been properly prepared was planted and as a result there will be many failures. There was not time to make the preparation that

(Continued on page 15)

the supply of stock feed.

Pastures offer one of the best means of increasing animal production. The greater part of the pasture land is planted and left to produce what happens to grow. This is a deplorable condition since a pasture will yield so much more satisfactory results if given just a little care. A pasture left entirely uncared for soon develops a number of undesirable conditions which can readily be improved by a small amount of work.

A good pasture will be evenly covered with a sod that is not readily injured by the tramping of animals. The grasses will be palatable and nutritious and made up of a mixture that supplies fresh feed throughout the season. Some grasses grow best during the early part of the summer;

it is a mistake to attempt such work without the proper direction.

If you are interested in having some of your land reclaimed request for assistance should be sent to R. A. Hart, Senior Drainage Engineer, Irrigation Investigations, 319 Federal Building, Salt Lake City, Utah.

This work of assisting the farmer is part of the work that is being done by the Department of Agriculture and farmers should take advantage of this splendid opportunity to secure free from our government help of this kind.

DAIRYING

SILOS—A GOOD INVESTMENT

A. C. Baltzer.

Silos are needed throughout the country. Next to the importance placed on the need of subscribing to the Liberty Loan, the National City Bank that, "there ought to be a million silos built and filled this year before the growing season is over. They will not only help win the war, but to make living cheaper after the war."

What advice is more far-reaching and important and absolutely sound and practical than this? Can the breeder of livestock, the dairyman, the producers of the nation's food supply pass lightly on such a far-sighted statement and policy? Silos, yes, silos are needed, and let us point their large mouthed openings straight up to the sky, and not alone have miniature silos pointed at an angle and containing only destruction and death. Let us fill silos with crops that will construct our livestock and especially our dairy industry, and let the silo be the signal for new life and hope to the rancher who last winter paid dearly for hay and grain.

Can we not efficiently do our bit to help win the war in this manner, by building a silo and conserving the food supply for the stock, just as much so probably as the man shouldering a gun?

Has that experience of last winter taught you anything? Surely, we must progress and we realize that the graduate school of hard knocks and experience is expensive. For this reason to avoid the repetition of shortage or high prices again that may occur next winter, we urge you to "BUILD A SILO."

We have urged before, "BUILD A SILO" and we believe it not yet too late to "BUILD A SILO." It is the dairyman's best and strongest weapon to meet the high cost of feed. Even though you may have no corn, still

your crops of oats, or oats and peas or other mixtures will return and yield much more food value if ensiled than if they were harvested in the ordinary manner and a large percentage of the crop allowed to go to waste.

One should always remember that silage is very palatable, it is the cheapest and the best form in which a succulent feed can be provided for winter use, and that it is a good "winter grass without the flies."

DO PURE-BREDS PAY?

Last week an Illinois farmer who has been in the dairy business all his life sold at public auction 16 head of grade Holstein cows, one of them with a yearly record of over 10,000 pounds of milk to her credit. He has not gone out of the dairy business, only out of grade cows. Several years ago the first pure-bred cow came to his farm, and he has been steadily building a pure-bred herd, which he now has with no grades on the place. This man is a practical dairyman. What he has his cows have brought him. He grew into the dairy business at the start, with grade cows, and now he has grown into the pure-bred business, with market milk still the chief source of revenue. It cannot be said that he has not had experience. He has worked good grade cows and pure-bred cows side by side and has made his choice. There is nothing new or unusual in this story. Many other livestock men have traveled the same route. But it should be significant for those who are depending on grade cows, and particularly for those who renew their herds by purchase. The best cows seldom change hands, and the best way to get good cows is to buy a bull out of a high-producing dam and raise the best of the heifer calves. For in these times of high cost of feed and labor there is no place for the inferior cow on any farm that is run for profit.—Farmers Review.

CORN KEPT IN SILOS

MAKES A CHEAP FEED

Because of the economy and convenience of feeding silage, more silos are being built every season. This year will likely see a larger number erected to "can" the corn crop.

Seventeen percent more milk and 28 percent more butterfat was produced by dairy cows fed largely silage than by others fed mainly a grain ration in a feeding test conducted at the Ohio Agricultural Experiment Station. The silage ration produced butterfat at 13 cents a pound, and the grain ration at 22 cents. Two pounds of dry matter can be produced in the form of silage at less cost than one pound in sugarbeets, other tests have shown.

MAKE MORE CHEESE

Cheese is an excellent substitute for meat and its manufacture should be encouraged. Our state and those adjoining are naturally adapted to this work.

The price of cheese has greatly increased in the last few years. As a result great interest has been created in the possibilities of cheesemaking, both on the farm and in the factory.

Because of the skill necessary to make a good and uniform product, the advisability of making American Cheddar cheese in a small way on individual farms is questionable. Under those conditions it is much more practicable to make cottage cheese.

The quantity of milk available within a reasonable distance and the climatic conditions determine the advisability of establishing a cheese factory in a community. The income derived from milk made into cheese, compared with the other uses, can be calculated from these figures: Costs of manufacturing and marketing average about 2.5 cents a pound, and milk



You Need a Magnifying Glass
to see the seams and pores of an axle. They're too small to see but they're big enough to cause friction trouble. Use

MICA Axle Grease
on your axle and prevent friction. It is made of the finest grease stock and powdered mica. It fills the pores and gives the axle a bright, hard coating.

THE CONTINENTAL OIL CO.
(A Colorado Corporation)
Denver Pueblo Salt Lake City
Cheyenne Butte Albuquerque Boise

yields from 2.7 to 2.9 pounds of cheese for each pound of butter fat.

About 4,000 pounds of milk daily in the flush of the season is the quantity necessary for the economical operation of a cheese factory, and can be handled by one man. To supply the milk about 200 cows are necessary and should be within 4 miles of the factory, otherwise the cost of hauling the milk is too great. Cool nights and an abundance of cold water are necessary for cheese making.

Any one who is interested in starting a cheese factory large or small see or write to Western Dairy Division Federal Building, Salt Lake City for information. Experts will help advise you without cost.

FREE SUPPLY OF WOOD

To meet any possible coal shortage in the West next winter, more extensive use of fuel wood from the National Forests is urged by the Government's foresters, who are advising both ranchers and town dwellers to be forehanded in making arrangements for the supply of their fuel needs.

The supervisors of the 153 National Forests will be instructed to afford all possible facilities to local residents wishing to obtain cordwood, which settlers may obtain free for their home use and which is sold at low rates to persons cutting and hauling in order to sell to others. Since the material thus utilized is mainly dead timber, its removal, it is explained, helps clear up the forest and thus lessens the fire menace. Timber which is insect-infested, or old and deteriorating, or otherwise damaged or undesirable from the forester's standpoint, is also disposed of for fuel purposes. The demand in the next twelve months is expected to break all records.

There is a possibility of a coal shortage because of the increased demand for coal by industrial plants and the lack of sufficient means of transportation. It is believed that it will be quite feasible and economical for many western communities to utilize an increased quantity of National Forest wood for fuel next winter. When dead and down timber or other timber which is deteriorating is not available for cordwood, the cutting of mature living trees will be permitted to the extent necessary to meet demands.

While wood as a fuel is less economical to handle and use than coal, it is in many parts of the West cheaper, even at normal price levels. Stoves and furnaces, however, equipped to burn coal usually require different grates to permit of the substitution to advantage, and this is pointed out as one reason why the householder will do well to look ahead and decide beforehand how he will keep warm and what he will feed the kitchen stove next winter.

Where sawmills are operating in the woods at points within hauling distance of towns, there is a chance to obtain slabs and other material that ordinarily goes to waste. Since green or wet wood is both poorer fuel and heavier to transport and handle than dry, mill waste as it comes from the saw is relatively undesirable for immediate use. For this reason, as well as in order to be sure of a supply, the Government foresters sug-

CUTTER'S BLACKLEG PILLS

"California's Favorite" for nearly 20 years

For the Prevention of Blackleg in calves and young cattle

Their superiority is due to nearly 20 years of specializing in "Vaccines and Scrums only."

Year in and Year Out they give better satisfaction than any other vaccine made, and the cost of a few cents per dose is cheap insurance against a disease that always takes the fattest and best.

Single Pills may be used for ordinary and range stock.

Double Pills should be used for pure bred and high grade stock.

Use any Injector, but Cutter's simplest and strongest.

Prices:

10 dose pkge. Single pills \$1.00
50 dose pkge. Single pills 4.00
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Cutter's Pill Injector... 1.50

Insist on Cutter's. If unobtainable, order direct.

Write for new booklet, "The Control of Blackleg." It tells about Anti-Blackleg Serum which cures Blackleg and may be used simultaneously with vaccine to combat outbreaks and safely protect valuable stock.

The Cutter Laboratory, Berkeley, Calif.

The Cutter Laboratory of Illinois, Chicago
Eastern Agent



HOLSTEIN CATTLE
Purebred Registered
Send for Free Illustrated Booklets. The Holstein-Friesian Association of America, Box 279, Brattleboro, Vt.

Save The Fruit

You can help America this summer and fall by helping yourself—utilize and save the west's great fruit crop. There is only one satisfactory way to conserve this bountiful harvest—that is by canning or preserving. Careful housewives will "lay in" ample supplies of fruit for the coming year and, for preserving and canning will

USE "TABLE AND PRESERVING" SUGAR

gest that a good-sized woodpile in the backyard or under cover before winter sets in may be found a thrifty provision.

Utah Farms

have our confidence. We are glad to accept them as security for first mortgages at reasonable rates.

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This bank with the capacity to handle business of large proportions, has a spirit of helpfulness for the small as well as the large depositor.



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Natural Winter Storage of Vegetables In the Home

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AVERY

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Keeps good harness good. Makes old harness look like new and wear longer. Preserves the leather and prevents checking. No acid, lamp black, or fat.

Sold in 1 pint to five gallon tins, barrels and half-barrels.

THE CONTINENTAL OIL COMPANY

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Denver Pueblo Salt Lake City Cheyenne

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supplemented by a layer of manure, straw, corn fodder, etc., in winter time. Outdoor cellars are usually left with dirt floors as a certain amount of moisture is desirable. These cellars may also be made of concrete, brick, stone, or other material. Such cellars are to be found in many sections of the country, and provide almost ideal storage facilities for potatoes, beets, turnips, carrots, parsnips, salsify, and celery.

Irish Potatoes.

Irish potatoes can be stored in pits, root cellars, or aboveground, frost-proof storage warehouses. Small quantities or even carload lots of potatoes are often placed in pits in the field when other storage facilities are not available. Immature potatoes can not be successfully stored for any considerable period even in the best of storages and should never be pitted or buried. Well matured tubers of either early or late sorts, if sound and in a dormant condition upon the advent of freezing weather in the autumn, may be kept until required for table use or for planting by pitting, storing in potato cellars, of which there are many designs, or in above ground frost-proof buildings. The commercial storage of Irish potatoes is discussed in Farmers' Bulletin 847, entitled, "Potato Storage and Storage Houses."

Onions.

Onions should be well matured before harvesting, and should be allowed to become thoroughly dry before being stored. They may be put up in baskets, crates, or bags, and placed in a cool dry place. The attic is better than the unheated cellar for storing onions. Temperatures slightly below the freezing point do not injure them.

Money in Rainmaking Water

Let us start
you in a business
that will make you from
\$15 to \$50 a day when farm
work is slack. Other men
have done it for years with an

**One
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One
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**Improved Powers
Combined Well Boring
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Same rig burs through any soil at rate
of 100 ft. in 10 hours, and drills through
rock. One team hauls and operates
machine. Engine power if wanted
Easy to operate - no experts needed

**Small investment; easy terms.
Make machine pay for itself
in a few weeks work.**

There is a big demand for wells to
water stock and for irrigation
Write for free illustrated circulars
showing different styles

**Liste Manufacturing Co.
Box 978
Clarinda, Iowa**

provided they are not moved or handled while frozen. The commercial storage of onions is briefly discussed in Farmers' Bulletin No. 354.

Beans, Peas, and Other Dried Products

Such vegetables as may be kept in the dry state should be grown to as great an extent as possible. Various kinds of beans, including Lima beans, should be allowed to dry on the vines. Lima beans should be gathered as they mature, and placed in a warm dry place until dry enough to shell. Navy beans and kidney beans are usually harvested when a maximum number of pods are mature and before the ripest pods open and the vines cured like hay, after which they are threshed or shelled. Peas are handled in the same way as navy beans. After the beans and peas are threshed or shelled they should be placed in bags and hung in some dry place, such as a closet or attic.

Dried corn, dried apples, peaches, apricots, raspberries, etc., may be stored in the same manner. All dried products should be protected against insects, rodents, and dirt.



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the address, subscribers should be sure to give their
former as well as their present address, otherwise the
address cannot be changed. This is a matter of im-
portance to you and to us.

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Bear River Valley Farmers' Protective and Commer-
cial Association, Agricultural College Extension De-
partment and Utah State Fair Association, Utah-
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sent upon application.

Build a silo and can your corn for the live-
stock. They like canned corn when put in a
silo.

Weeds are robbers. We need all that can be
produced to feed the world. Kill the weeds and
help production.

Only the best cows will pay a good profit when
feed is high. Weed out the borders and keep
the profitable ones.

Mow the weeds along the roads and ditch bank
before they go to seed. Will save you much
time next year fighting them among your crops.

Harvest time is here. Grain is being cut. Care-
ful handling pays. Avoid the wastes and put your
crops in good condition for marketing or for stor-
age.

Much is being said about waste and it is well
to emphasize it, because there is a great amount
of waste. There are however, some homes where
little or no waste occurs. They have been sav-
ing and careful for years. It is a good thing to
avoid the waste. We must all help this year so
that we can win for freedom and democracy.

SIGN YOUR LETTERS

We have several letters in our office that we
can not answer because they are not signed, we
do not know who wrote them. Others are signed
but no address given. When you ask questions
and we want to encourage all of our readers to
do it, always give name and address. If you do
not want your name published just say so and
we comply with your request.

It is unusual for us to get many letters of this
kind with no address or signature but a number
have come to us in the last week or two.

MACHINERY PREPAREDNESS

One of our large jobbers of farm machinery
said, "If we try to hurry a shipment of farm
machinery the factory will cancel the order."

The manufacturers are away and in their

orders and many of our dealers are going to have
a serious time in filling their orders to the farmers.

On account of the scarcity of labor farm mach-
inery is going to be more necessary than ever
and it now looks like it will be more difficult to
secure than ever.

Our advice is to secure what machinery you
need at the earliest possible date. Look over
your machinery carefully and order at once any
parts or repairs you will need. This is important
under present conditions. Do not wait until you
are ready to go to work for then you may be forc-
ed to wait and loss of crop may follow.

VROOMAN VISITS UTAH

The people of Utah appreciate the praise that
was given them by Carl Vrooman Assistant
Secretary of Agriculture. He lauded the industry
and systematic co-operation of the people of Utah
in the production and conservation of food. It
was a compliment to this state for a man like
Mr. Vrooman to say that Utah was the first state
to be effectually organized in the work of in-
creased food production.

Mr. Vrooman came with a message and he im-
pressed those who meet him and to whom he
spoke that the question of saving food is of the
greatest importance. Read the article com-
mencing on the front page. If we are to win
in this war, it will be a victory over famine.
Every one must help. Utah will do her part, we
will keep up the good work we have been doing.

A GOOD BROOD SOW

If you have a good brood sow—one that has
proven her worth, one that will produce a good
litter of pigs and care for them, don't sell her.
It is like "killing the goose that laid the golden
egg" to do such a thing.

Too many farmers are allowing their good
brood sows to go to the market. It is a mistake
to dispose of a sow that will produce a profitable
litter of pigs and supplant her with a young un-
proven gilt or what is more serious to sell her and
not keep another in her place.

Keep the good brood sows as long as they are
useful and many will not slow up in their pro-
duction until they are six or more years of age.

A shortage of hogs is reported and the best
way to help over come that condition is to keep
the proven or good brood sows.

THE WORTHLESS DOG.

One of your readers suggests that something
be done with the worthless dog. The cur that is
running at large doing damage in many cases, a
public nuisance, and evil that should be controlled
by taxation or killed.

The dog that is in the habit of running from
place to place often carries disease home to your
children.

Food used for such animals is wasted and
economy of the present time demands that such
waste be stopped.

We have been advocating that sheep should be
raised on the farm, this is practically impossible
when dogs are allowed to run at large. One of
those worthless curs will kill a small band of
sheep in a night.

How are we to be protected from such dogs?
Now is the time for a concerted action of some
kind. To the dog that is useful, that is helpful
and is taken care of we have nothing to say.

A GROWING INDUSTRY

The packing industry in Utah is growing. More
has been done during the past twelve or more
months to emphasize this important industry
than for several years.

For years we have been producing many cattle,
sheep and some hogs, sending them away and
them back in the form of manufactured

The formal opening of the new additions to the
Ogden Packing and Provision Co. plant was
celebrated in an elaborate way by hundreds of our
citizens this week. From a small beginning about
11 years ago the plant has developed until now

it is the largest packing plant west of Omaha. The
establishment of such industries should mean
much to our livestock industry. A market here
at home is what we need and such institutions
are going a long ways to help make it.

A visit through this big plant, shows what can
be done by men and money. Such concerns
help to build up the state for they furnish employ-
ment for our citizens and a market for our live-
stock.

The packing industry in our state is growing.
Livestock is one of the most important branches
of farming. A close co-operation between the
farmers and packing interests means a big thing
for our state.

FARMERS EXCURSIONS.

A number of excursions are being arranged by
the farmers—some going north, others south.

The value of such trips is known best to those
who have made them. No argument will be
necessary to convert those who made one of these
trips last year, that they should go again.

To see and learn what the other fellow is do-
ing is one of the best methods of education and
helpfulness that we know of. One idea that
may be secured will pay for the whole trip.

These excursions are usually planned and
directed by the county agents.

A definite outline and program for the trip is
made. Some of the best farms on the route are
stopping places. We suggest to those in charge
that when they print their itinerary they tell why
a stop is made at such and such a farm. What
lesson is to be learned from this or that farm.
Long trips are usually made and visits are
short at such important places. Sometimes we
try to cover too much ground.

The experience of those who have helped con-
duct these excursions should make each one
more successful.

Every one is busy, but a rest of a few days
will help rather than hinder in the work of the
farm. Take a day or two off and come back re-
freshed and better able to do your work.

In the farmers excursions you have both plea-
sure and profit. This year more than any other
you should take advantage of going on one of
these excursions.

PIONEER SUGAR FACTORY

The Lehi Sugar Factory is the Pioneer sugar
beet factory in the United States. There was
another built previous to the Lehi factory which
later was closed down.

To Mr. Thos. R. Cutler and his associates much
credit is due for the success of the present sugar
business.

Much credit is due to the farmers who supplied
the Lehi factory with beets for they had a new
branch of farming to learn. They derived very
little profit, if any, during the first years of the
factory as nearly all the work was done by hand.
Modern machinery and new methods are now
helping the farmer so that he can produce beets
at a profit.

It was a struggle for the Lehi factory and farm-
ers to demonstrate that beets could be raised
and made into sugar.

The Lehi factory has been as a school, where
men have been trained for this work and are now
running many sugar factories both in this and
other states.

Many of the Lehi farmers have been selected
and moved to other places where they are now
acting as agricultural superintendents and field
men.

As an out-growth of the Lehi factory thousands
of tons of beets and sugar are produced today in
many different parts of the United States. As
with any new industry, it took a great deal of
perseverance on the part of both the company and
the farmers to stay with the sugar beet industry
under such adverse conditions as were experi-
enced in the early days of the Lehi factory.

Today the sugar beet growing and manufactur-
ing is one of our largest industries.

FOOD CONSERVATION AND PRODUCTION MOST IMPORTANT

(Continued from page 1)

be unable to put a great army on the battlefield. But, thank God, we have sent enough men to the front to show the countries of Europe that we are in the war—enough to give us the right to float the Stars and Stripes alongside the Union Jack of Britain and the tri-color of France.

"Our chance has come. The greatest crusade the world has ever seen, the greatest cause for which a free people ever drew a sword, calls upon us to sacrifice and achieve. We have entered this crusade with hands as clean and hearts as pure as ever were those of knights of old going forth to search for the Holy Grail. Your opportunity and mine has come to do something eternally worth while—to make some sacrifice for high, spiritual ends. Let us each do his part promptly and with a solemn sense of the significance of what we do, for this is an opportunity for service to the cause of human freedom the like of which may never come to us again.

Goes After the Speculators.

"I am not against the legitimate middle man, for they are necessary to the business of the country. But I am against the middleman in the form of the speculator who drives food prices beyond the reach of the workman.

"Unless the patriotism of the business men of this country is of the same caliber as that of the men in trenches it is not patriotism at all. This is not the time to heap up immense profits; it is the time to give. Business in time of war is no more than a mechanical necessity; when it takes any other form it is most despicable.

Englands Problems

"When this war was started, people had old-fashioned notions of warfare. They thought wars were made by armies alone.

"England felt secure with her incomparable navy. But when war came it was useless, so she organized a great army. Then she found she had ounces of powder when she should have had tons; pounds of munitions where she needed shiploads. She found the German artillery outranged the English guns by miles. Then England awoke to the danger and called upon Lloyd George to create and organize munition factories.

"But in the haste to further the just cause England forgot that justice begins at home. The question of illegitimate war profits arose and the British workmen struck. When reproached for lack of patriotism, they said: 'Not a wheel shall turn in England until we have justice. Our masters are piling up illegitimate profits by the millions, but we cannot live on the wages they pay.' When accused of disloyalty, they said: 'We will work for low wages—if need be, for no wages at all—on condition that our masters will place the factories, their mines and their railways at the disposition of the government as we offer our labor.'

"When this acid test was applied the government called a conference of capitalists, of laborers, of farmers, of government officials. They got around a common table and came to a common understanding to guarantee every man a square deal. To capital a reasonable profit, and no more; to labor a living wage, and no more; to the farmer a reasonable remuneration for labor and capital, and no more. Upon this basis the work of England was co-ordinated, and from that moment the British war machine leaped forward with ever-accelerating speed.

"After these problems were solved Englishmen though they had planted their feet on the straight road to triumph. But their hope was short lived. There arose before them still another great problem and they found out, as had Germany and France and Italy, that the war was going to be won by the nation or combination of nations able to feed itself the longest. Thus the war has become admittedly a food

war, with famine fighting against the field.

"In this war of liberation the United States holds the trump—and when it is played it will be seen to be a bread card." Bread will win.

"Victory is as sure as tomorrow's sun; the only question is how soon our triumph shall come. This is now a war of food—and we have the food.

"I think we are glad that we are in this war with no bitterness in our hearts for the people of any nation, that our quarrel is with a caste and a principle rather than with a people and that the flood of corn and wheat with which we shall win this war is a positive rather than a negative force. I like to think that we are engaged in this great food production campaign not merely with a view to feeding ourselves, our armies and the armies of our allies, but with a view to feeding ultimately the starving millions of the central powers.

"Would it not be a fine thing, a thing as typically American as the marksmanship of our naval gunners, if, after the war, we were to furnish bread to Prussia, to Bavaria, to Austria, as well as to stricken Poland and devastated Serbia?

"Today the ghastly spectre of famine is lurking over the skyline of every European nation. Whether it can be kept from the streets of their very capitals, whether or not its victims will ultimately be more numerous than the victims of the trenches—these are for you and me and the rest of us Americans to determine.

"We alone can hope to meet this menace. And it is not yet decided if we can meet it successfully.

Will Help Farmers.

It was announced at the dinner given in honor of Mr. Carl Vrooman that a Salt Lake man had offered his services to aid in the work of conservation. He has a storage plant of 300 to 400 car load capacity and says he will store potatoes and like products during the coming winter at actual cost. If it is necessary he will advance 40 to 60 per cent of the value of the products to the farmer who is in need of money and wants to store his products. If any of our readers wants to take advantage of this offer they should plan now to do it and write our office and we will put them in touch with this patriotic concern.

WHERE ARE OUR LIVESTOCK?

A serious shortage of livestock is shown by our farm surveys which are now being reported. When a district like Lake View has 25 less cows and 50 less hogs in 1917 than in 1916, it shows that we are losing sight of the fundamental principle of farming—"soil fertility."

A certain amount of stock is vitally necessary to the permanent prosperity of any farm. Not 50 per cent of our farms in Utah county are sufficiently fertilized this year. And we continue to sell off our stock.

One of our towns, Vineyard, has 535 milk cows, one-third of the total number in our county. Are they burdened with manure piles? Not a single pile can be seen this summer. And their farms tell the tale. Their yields tell the tale. Their homes tell the tale. Their autos tell the tale, and better than all, their bank accounts tell the tale.

Fellow farmer, you need more livestock.

Ninety-five per cent of the prosperous farmers of Utah county are making it on their stock. It doesn't take much scouting around to see this. Your problem now is to get more. Invest a good portion of your additional prosperity this year in cows, or hogs or a flock of sheep.—Utah County Farm Bureau.

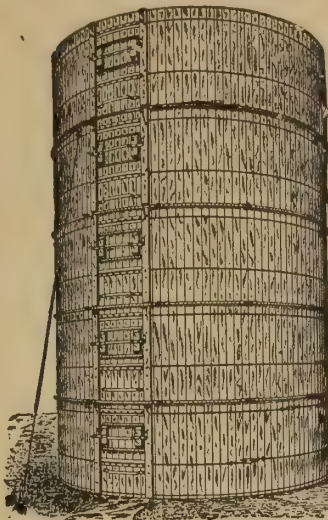
This is good advice to Utah County farmers, and it is just as good advice to hundred of other farmers.

I wonder sometimes if we realize the shortage of hogs and other livestock this year as compared with previous years.

Something must be done to increase

Here's That Silo You Have Always Wanted

The Tulsa Silo is one of the most durable on the market. It is easy to erect, and will withstand all kinds of rough wear. It is re-inforced throughout with steel lining.



Here is a silo that won't fall down when it is empty. It will give unlimited efficient service, not merely stand up for one year.

The Tulsa Silo

is low priced—strong, easily portable and economical in both upkeep and erection. Come to our yards in Murray and see the Tulsa. We can make immediate deliveries at the following prices.

10-20—30 Ton Capacity.....	\$140.00
12-20—50 Ton Capacity.....	150.00
12-24—60 Ton Capacity.....	160.00
12-12—1,000 Bu. Capacity.....	140.00

Investigate our easy payment plan. It enables you to put a Tulsa Silo on your farm TODAY!

Miller-Cahoon Co.

Murray

Idaho Falls

\$40.50 Los Angeles and Return Tickets on Sale Daily June 15th to Sept. 30th

Diverse Routes Via Rail and Steamer, Including San Francisco

Proportionately Low Fares for Tickets Including San Diego, Portland, Seattle.

Stopovers at All Points. No Validation Fee.

Final Limit October 31, 1917.

For Reservations and Routings, see

Local Agent, or Address

WM. WARNER, A. G. P. A., Salt Lake City, Utah.



our livestock or we will find ourselves in a most serious condition. In nearly every report of farm surveys that I have read, the most successful farmers, the men who are making the most money, are those who keep plenty of livestock on their farms. They feed their hay and grain and their returns come in the way of selling manufactured products, such as butter, milk, and fat hogs or beef for the market.

If Utah wants to become the prosperous state that we hope for her, we must increase our livestock.

YOUNG AMERICA

Willie, aged five, was taken by his father to his first baseball game. The extent to which he was impressed did not become evident till he said his

prayers that night. Then, to the horror of his parents, Willie prayed:

"God bless papa,
God bless mamma,
God bless Willie;
Boom! Rah! Rah!"

WHY WORRY

The worry cow would have lived till now,

If she'd only saved her breath;
But she feared the hay would't last all day,

So she choked herself to death.

THE ONLY WAY

Doctor—"You must be careful and follow the right direction for taking those pills."

Pat—"G'wan wid ye! There's only wan direction fer them tuh go."

HOME

TOMATO VALUE IN DIET, AND PREPARATION

Gertrude McCheyne.

The value of tomatoes like that of other fresh vegetables and fruits lies in the ash and certain life-giving substances called vitamins, its fuel and protein content being low. Tomato ash contains a high amount of iron, phosphorus and calcium, making them an important food in tissue and blood building also in keeping the blood pure. It is strongly alkaline in reaction and therefore is an excellent food for keeping the acid content of the blood low. Having these important constituents, tomatoes should be used abundantly while in season and bottled for use when fresh ones are too expensive.

To get the greatest benefit from tomatoes they should be served in their fresh raw state. They can be served with salt, sugar, and acid, as lemon or vinegar, or served as a salad in combination with one or more of the following: Lettuce, radishes, cucumbers, watercress, cold cooked asparagus, string beans, peas, potatoes, or cheese, eggs, meat, fish, nuts, etc.

Strained tomato juice, bottled, saves containers and also the later trouble of straining when needed for soups and sauces.

Any of these combinations are made more pleasing to the eye and therefore appetizing by setting in gelatin. That is, prepare gelatin with water according to proportions and directions on the package. When it is slightly stiffening, stir in the salad combinations and let stand in mold until stiff. Remove from mold and serve on lettuce leaves with cream or mayonnaise dressing.

If bottled whole the tomatoes may be sliced and used for salad or served cold as a fruit, with cream; or hot with salt, sugar, butter or drippings, and with cracker or bread crumbs.

Tomato Recipes

Scalloped Tomatoes—Season cooked tomatoes with salt, pepper, sugar and a few drops of onion juice. Moisten bread or cracker crumbs with butter or drippings, spread generously over the tomatoes and brown in the oven. Raw sliced tomatoes may be used in

layers. Alternate crumbs and tomatoes.

Tomato, Onion and Meat Stew—Cook a large, finely sliced onion in a small amount of water until tender. Combine the onions and the water in which they were cooked with 1 quart of tomatoes and some mediumly fine chopped meat with stock or water and drippings. Heat to boiling point, add thickening made of 3 tbs. flour and water. Cook for about twenty minutes to cook the flour.

Tomato Soup with Stock—Season tomato juice with salt, pepper, sugar and onion juice, bayleaf celery salt or water from cooked celery, carrots, cabbage, etc. Add the seasoned tomato juice to the boiling meat stock. Serve with croutons.

This soup may be made with beef drippings or butter and diluted with more water.

SUGGESTIONS FOR ECONOMY IN JELLY MAKING

Marmalade with Salt—Sugar.

Note. The conclusions are those of Miss Dorothy Wright Russel, graduate June 1917 in normal household science from the School of Household Science and Arts, Pratt Institute. The subject was suggested by Dr. Langworthy to test statements made in an article in the English magazine, Food and Cookery. As the saving is considerable, it seems worth while to pass this around. The conclusions only are given here.

(1) A satisfactory basis for the reduction of sugar in marmalade and jams is 1 lb. of fruit to 6 oz. of sugar and ¼ oz. of salt. A higher proportion of salt gives a product with the characteristic salt taste, while a lower proportion of sugar gives a sour marmalade or jam of thin consistency. After the first few days of standing, there is no change in the flavor.

(2) The reduction of sugar and addition of salt might seem to apply to any fruit, as satisfactory results were obtained with orange and lemon, strawberry, pineapple and rhubarb, and apricot and pineapple.

(3) The costs of marmalades or jams in which the sugar was reduced and salt used was two cents a glass cheaper than with those using the customary amounts (with sugar at 9c a lb.). In speaking of larger quantities, the saving would be greater than it seems in one glass. This substitution, therefore would be of value where there were large amounts of fruit and little money to be spent on sugar, or in a crisis such as our present war situation, where there may be a shortage of sugar and unless a cheaper means of preserving fruit, especially the perishable fruit, is found, there will be great waste. It must be kept in mind that this work is not done to obtain an equal product, but to get a palatable, acceptable product with the use of less sugar.

(4) Brown sugar gives a darker color to marmalades and jams, which is not so pleasing to the eye. With orange marmalade, made in the usual way, it gave an over sweet flavor, but was not greatly different from the white sugar when used in the satisfactory orange marmalade in which there was salt. With fruit as strawberries, rhubarb, pineapple and apricot, it detracts from the flavor of the fruit.

WAYS TO USE COTTAGE CHEESE

Cottage cheese is richer in protein than most meats and is very much cheaper. Every pound contains more than three ounces of protein, the chief material for body building. It is also a valuable source of energy, though not so high as foods with more fat. It follows that its value in this respect can be greatly increased by



The Complete Oil Stove

IT'S the New Perfection No. 37, which combines a 4-burner stove, a built-in heat-retaining oven, a cabinet and a warming shelf into one compact, yet roomy, complete cooking device.

It has the Long Blue Chimney—too That means perfect combustion and perfect flame control. No soot, no odors, no surging heat waves to cook the cook.

The New Perfection is easy to light and cooks fast or slow as you like. In use in more than 2,500,000 homes. Ask any hardware or housefurnishing store.

For best results use Conoco Safety Oil.

THE CONTINENTAL OIL CO.

(A Colorado Corporation)

Denver Butte Pueblo Salt Lake City Cheyenne Albuquerque Boise

Bales at Highest Speed—Lowest Cost

UNBEATABLE records for baling greatest amount of hay in the shortest amount of time and at lowest expense for power and crew being made constantly with

The Admiral Motor Hay Press—The Hay Press With the Hustle

Has the hurry built right into it. Simple as A B C. Free from needless parts. Smooth running—easy on the engine that runs it. Engine absolutely dependable, thoroughly tested for all conditions of field work. Plunger operates on the power which comes through a long lever working against the sharp grip behind the plunger head. Result, each stroke is powerful, with no back kick. Many exclusive features. A big money maker for the man who uses one. J. N. Inman & Sons, (Haybalers), Independence, Mo., say: "Bales 90-80-lb. bales in 55 minutes from windrow, and 70-70-lb. bales in 50 minutes from stack. Have made big money." Hundreds have had the same experience. Admiral Hay Press Co., Box 55, Kansas City, Mo.



SOLD BY UTAH IMPLEMENT-VEHICLE CO., SALT LAKE.

Your Food Supply

The more fruit you put up for use in winter, the lower will be your cost of living. Sane economy should be practiced by all.

EXTRA FINE Table and Preserving Sugar ABSOLUTELY PURE

is always preferred for canning fruit, jelly making and all purposes for which sugar is used. It is pure, sweet and good; always gives satisfaction.

Order a bag from your dealer; he will recommend it for quality.

Made by
UTAH-IDAHO SUGAR CO.

serving it with cream, as is so commonly done.

Cottage cheese alone is an appetizing and nutritious dish. It may also be served with sweet or sour cream, and some people add a little sugar, or chives, chopped onion, or caraway seed.

The following recipes illustrate a number of ways in which cottage cheese may be served:

Cottage Cheese with Preserves and Jellies.

Pour over cottage cheese any fruit preserves, such as strawberries, figs or cherries. Serve with bread or crackers. If preferred, cottage-cheese balls may be served separately and eaten with the preserves. A very dainty dish may be made by dropping a bit of jelly into a nest of the cottage cheese.

Cottage-Cheese Salad.

Mix thoroughly one pound of cheese, one and one-half tablespoonfuls of cream, one tablespoonful of chopped parsley and salt to taste. First, fill a rectangular tin mold with cold water to chill and wet the surface; line the bottom with waxed paper, then pack in three layers, putting two or three parallel strips of pimento between layers. Cover with waxed paper and set in a cool place until ready to serve; then run a knife around the sides and invert the mold. Cut in slices and serve on lettuce leaves with French dressing and wafers. Minced olives may be used instead of the

parsley, and chopped nuts also may be added.

Cottage-Cheese Rolls.

(To be used like meat rolls.)

A large variety of rolls, suitable for serving as the main dish at dinner, may be made by combining legumes (beans of various kinds, cowpeas, lentils, or peas), with cottage cheese, and adding bread crumbs to make the mixture thick enough to form into a roll. Beans are usually mashed, but peas or small lima beans may be combined whole with bread crumbs and cottage cheese, and enough of the liquor in which the vegetables have been cooked may be added to get the right consistency; or, instead of beans or peas, chopped spinach, beet tops, or head lettuce may be added.

Boston Roast

One pound can of kidney beans of equivalent quantity of cooked beans. One-half pound of cottage cheese. Bread crumbs.

Salt. Mash the beans or put them through a meat grinder. Add the cheese and bread crumbs enough to make the mixture sufficiently stiff to be formed into a roll. Bake in moderate oven, basting occasionally with butter or other fat, and water. Serve with tomato sauce. This dish may be flavored with chopped onion cooked in butter or other fat and very little water until tender.

Pimento and Cottage Cheese Roast. 2 cupfuls of cooked lima beans.

¼ pound of cottage cheese.
5 canned pimentos chopped.
Bread crumbs.
Salt.

Put the first three ingredients through a meat chopper. Mix thoroughly and add bread crumbs until it is stiff enough to form into a roll. Brown in the oven, basting occasionally with butter or other fat, and water.

Cottage Cheese and Nut Roast.

1 cupful of cottage cheese.
1 cupful of chopped English walnuts.

1 cupful of bread crumbs.
2 tablespoonfuls of chopped onion.
1 tablespoonful of butter.

Juice of half a lemon.

Salt and pepper.

Cook the onion in the butter or other fat and a little water until tender. Mix the other ingredients and moisten with the water in which the onion has been cooked. Pour into a shallow baking dish and brown in the oven.

Cheese Sauce.

(For use with eggs, milk toast, or other dishes.)

One cupful of milk, 1 tablespoonful of cottage cheese, 2 tablespoonfuls of flour, salt and pepper to taste.

Thicken the milk with the flour and just before serving add the cheese, stirring until it is melted.

This sauce may be used in preparing creamed eggs or for ordinary milk toast. The quantity of cheese in the recipe may be increased, making a sauce suitable for using with macaroni or rice.

SOUPS WITHOUT MEAT

May Johnson.

Quantities given are for six persons. You can conserve the meat supply by using soups of this kind.

Cream of Celery Soup.

Parboil 2 cups of chopped celery, drain and put in a pint of fresh boiling water. Cook until very tender; rub through colander. Scald 1 pint of milk and add the celery; cream a tablespoonful of flour with 1 of butter, add salt and pepper and let come to a boil.

Old-Fashioned Vegetable Soup.

Chop a head of cabbage into small pieces, dice 3 potatoes and 2 tomatoes and cut an onion very fine; mix thoroughly and boil 40 minutes in a pint of water. Cream a tablespoonful of butter with 1 of flour, salt and pepper; stir into vegetables slowly and serve hot.

Mock Oyster Soup.

Peel and cut into pieces a bunch of salsify, soak for 2 hours in equal parts water and vinegar, remove and wash thoroughly. Place in a pan with a ½ pint of boiling water, boil until tender, add a pint of milk. Cream a tablespoonful of butter with 2 of flour, salt and pepper; stir in the soup and serve very hot.

Left-over Vegetable Soup.

Into a pint of milk stir 3 tablespoonfuls of cold boiled potatoes, 2 tablespoonfuls of cooked peas and 2 tablespoonfuls of cooked tomatoes; add pepper and salt. Cream 1 tablespoonful of butter and 1 of flour and stir into the boiling soup slowly. Serve hot.

DON'T THROW AWAY

Those old clothes you look over in housecleaning time until you are sure they cannot be made over into serviceable garments. I have effected a considerable saving in this line, and find it worth while in this time of high prices.

I made a white middie each for girls of ten and twelve from discarded stiff-bosomed white shirts, the collar and the band trimming on the sleeves matching the white plaited skirts which had been worn in dresses several years previous. The use of the middie made it possible to drop the skirt to the desired length, and the plaits were slipped to adjust to the right size around the hips.

A becoming summer dress with a skirt shirred to yoke depth and hanging full below was made for a twelve-

year-old girl from the best of two dresses of like material. The waist was made full also, and the necessary seaming showed but little.

In passing down outgrown clothes a tuck over the shoulder will narrow the width of the shoulder and shorten the sleeves.

Men's worn shirts make good aprons for the smaller child, using the front and back of body of shirt. The light blue ones are nice for this. Light shirts may be made into dresses for the baby. A round-yoke pattern with sleeves and body seamed together, then gathered full on the yoke, can be easily cut from a shirt. Men's discarded flannel shirts too badly worn to make repairing worth while make satisfactory shirt waists with very little time and trouble. It is best to cut over by a good waist pattern, but the yoke and the front plait may be left in. The body is cut off the desired length and an elastic inserted at the waist line and enough will be left below tails for collar and cuffs.

These make-overs mentioned are but the beginning in the line of saving. Many worthless looking garments have in them material which may be made into serviceable clothes at practically no cost. Men's cast-off suits or separate pieces offer opportunity for use in this way, as the material in the first place is usually good. A few instances will serve to show what may be done.

A dress of long serviceability was made for a child of nine from a much soiled separate coat and trousers of similar material, but harmonizing in color. Another dress that promises to give even better service was made from two pairs of men's dark blue heavy serge trousers. A panel front and back in the side-plaited middie was made of a lighter shade of material left from a skirt, and same was used to cover trimming buttons. A short-waisted dress with a flaring gored skirt was made from a pair of trousers, with sleeves and collar of other material.

Men's worn suits, if of good quality and color, are so well worth working over into garments in which the worn places are removed that the life of the original cloth is greatly lengthened. Try it and be convinced.

The first step in this making over process is careful ripping apart of all seams and stitching. It is then well to mark the right side of each piece of the cloth with a few long stitches of white thread, so that if the goods is turned when made up there will be no doubt as to right side and wrong side. Brush each piece well. Wash carefully in warm water with a good wool soap, using three vessels each with water of the same temperature. A slight suds should be made for the rinsing waters. The cloth may be dried, or allowed to partly dry. Press by laying a cloth over the goods and dampening this by another cloth or sponge, wrung out of water, and iron until cloth on goods is dry. An old skirt lining makes a good pressing cloth.

Careful planning, piecing and cutting are necessary for best results. A good pattern is essential. Plan the piecing to come in places that will be least conspicuous. Press open each seam carefully where it is necessary to make piecings, and plan such piecing to be made on a thread of the goods. Lengthwise piecing is far more satisfactory than piecing crosswise. The finished garment should be pressed as mentioned above.

Is it worth while? It is well worth the thought and effort you put into it if you go into it wholeheartedly. There is no opportunity for finding this work monotonous for each problem presents new food for thought and action.—Mrs. E. M. P.

WHAT TO DO IN A THUNDERSTORM

If you are out of doors in a very severe electrical storm, the Electrical Experimenter offers the following rules for your protection:



FEDERAL DOUBLE CABLE BASE TIRES

If you've never used Federal Tires try them now. Without an equal for country roads. The non-skid treads are tough and durable, give perfect traction and hold the car safely to the road in wet or slippery weather.

No matter how hard or rough the going, Federal Tires always hold fast. For down in the base of the tire four strong steel cables anchor the tire safely to the rim against the hardest kind of strains. Yet they slip off easily when necessary.

Made in white Rugged and black Traffik non-skid treads. Sold by leading dealers everywhere.

**The Federal Rubber Company
of Illinois**

Factories: Cudahy, Wis.

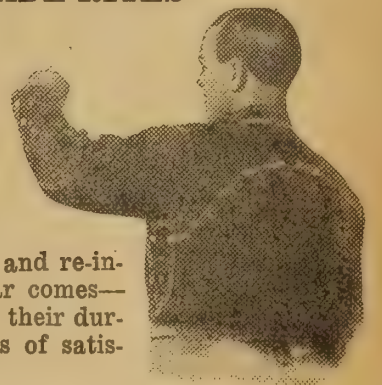
Manufacturers of Federal Automobile Tires, Tubes and Sand tires, Motorcycle, Bicycle and Carriage Tires; Rubber Feet, Fibre Soles, Horse Shoe Pads, Rubber Matting and Mechanical Rubber Goods.

(3)

Solve The Shirt Problem

By Buying "MADE-RITES"

You will learn what comfort and service a real work shirt can give.



They are made strong all over and re-inforced where the wear and tear comes—double elbows, double yoke, and their durability is attested by thousands of satisfied wearers.

JOHN SCOWCROFT & SONS CO.

**Also makers of Never-Rip Overalls
and Work Clothes.**

Ogden, Utah.

1. Keep away from wire fences. They may carry a dangerous electrical charge long distances. Cattle in pastures are frequently killed from the neglect of farmers to ground the wire of the fence.
2. Keep away from hedges, ponds and streams.
3. Keep away from isolated trees. Oak trees are frequently struck. It is safe in a dense forest.
4. Keep away from herds of cattle and crowds of people.
5. Do not hold an umbrella over you.
6. It is safer to sit or lie down in an open field than to stand.
7. Drivers should dismount and not stay close to their horses.
8. Do not work with any large metal tool or implement.

If you are indoors.

1. Keep away from the stove and chimney. The hot gases from the chimney may conduct the lightning to and down the chimney.
2. Do not take a position between two bodies of metal, as the stove and water pipe, for example. An exception to being near metals is the case of an iron bed. One of the safest places is on a mattress in an iron bed, provided you do not touch the metal. The metal surrounding you makes a safe cage which will prevent the lightning from reaching a person inside.
3. Do not stand on a wet floor nor draw water from the well or faucet.
4. Do not stand directly under a chandelier, near a radiator, nor on a register.
5. Do not use the telephone.

Drainage of Irrigated Farms

R. A. Hart, Senior Drainage Engineer.

(This is the first of a series of articles on drainage of irrigated farms by Mr. Hart that will appear in the Utah Farmer).

Many acres of irrigated land have become waterlogged. These must be drained before they can be brought back into use.

Much irrigated land contains an excess of alkali salts, and underdrainage is the basis of the process for their removal.

Water which percolates deep into the soil following irrigation often raises the water table to the height of the plant roots, where it may remain to the detriment to plant growth. Underdrainage will remove this useless water. If in sufficient quantities, water so removed may be used again in irrigation.

Seepage or storm water from adjacent tracts, or water released in the soil by spring thaws, may escape either through surface drains or through underdrains.

Underdrainage prevents the heaving of soil by frost, and permits its ventilation. It makes possible a warmer soil, permits deeper cultivation, and, by allowing the plants to develop a deeper and more complex rooting system, actually increases the available moisture in the soil, instead of decreasing it; by the same means it increases the available plant food.

Need of Drainage on Irrigated Lands

The drainage of irrigated lands differs from the drainage of wet lands generally in that it is undertaken to protect or reclaim from injury lands which have been reclaimed from their naturally desert condition at considerable expense and have been productive. The drainage of such land means not merely an addition to the productive area but the saving of the original investment in such land in the farm of which it is a part and in the water supply for irrigation.

Practically every valley where irrigation has been carried on for any considerable length of time has lands in need of drainage. Several classes of land in the irrigated section require artificial drainage in order to be fitted for crop production.

There are natural swamps, but these constitute a minor portion of the area under consideration. They are located chiefly near lakes or watercourses and represent surface accumulations of water. They usually are given over to tule growths, bulrushes, and willows.

Other naturally wet areas are those at the foot of mountains, benches and steeper slopes, produced by seepage from precipitation and from melting snows in the mountains or by springs fed from the same sources.

Of more importance than either of the foregoing, however, are the man-made swamps, the products of irrigation. The area of such lands constitutes by far the greatest portion of the entire area in need of drainage. Lands accustomed to a very limited supply of water from natural precipitation have been drenched with water and subjected to additional supply from leakage from reservoirs, canals, and ditches. Some areas have

been converted into veritable swamps; others have become waterlogged, so that they are impassable by man or beast and unproductive of useful vegetation; and still others have passed from a condition of high productivity to one fit only for wet pastures. These conditions are readily recognizable, and the need for drainage is evident, but the result of overirrigation manifests itself often in an accumulation of alkali salts on or near the ground surface, without any apparent wetness. Drainage is the only cure for the latter condition.

As often as not the lands injured by irrigation are not those on which the water is applied, but lower lying lands injured by the seepage from the higher land.

In addition to the foregoing there are natural alkaline areas that never have been farmed. The reclamation of these lands must be based on underdrainage.

Beneficial Results of Draining Irrigated Lands.

As the fundamental basis of all other benefits drainage removes excess water from the soil, whether on the surface or contained as free water within the pores of the soil.

In many instances irrigated land contains an excess of alkali salts and underdrainage is the basis of the process for the removal of these harmful salts. All of these salts are soluble in water and the soil water usually is charged with them so that in effecting its removal the salts in solution are removed. Where surface accumulation of salt powder or crystals has taken place, it usually is desirable to apply water artificially to leach out the salts.

Precipitation, which plays such an important part in drainage problems in humid sections, is of little importance in the irrigated section, but there are occasional heavy rains that are capable of doing damage by raising the ground-water table at just the wrong time. Underdrainage will take care of most excessive precipitation.

Of far greater importance than precipitation is the water lost by deep percolation following irrigation. In undrained soils this often brings the water table up around the plant roots where it may remain for a dangerous length of time. Underdrainage will take care of such excess unless unusually wasteful methods are used in irrigation.

Water making its way onto a tract by waste or seepage, or storm water from an adjacent tract, may be taken care of without injury to the tract by underdrainage supplemented by surface drainage, if desirable. A sudden change of temperature in the spring often supplies a surplus of water by the melting of snow or of frozen ground. Underdrainage takes off such water.

Underdrainage also prevents the heaving of soil by frost.

It is manifest that air and water can not occupy the same space at the same time and that water, being heavier, will crowd the air out of the soil pores. It is well known that for proper plant development the pres-

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ence of air in the soil is as important as a supply of moisture. When underdrainage is installed and the excess water moves downward, the air is admitted into the soil and the proper balance between the air and moisture content is restored.

When organic matter decays in the absence of air, as in water-logged soils, gases and other substances are sometimes formed which are injurious to plants. This is avoided by underdrainage, which enables the air to enter the soil.

It takes much more heat to raise the temperature of a given volume of water one degree than it does to raise the temperature of the same volume of air to the same extent. Underdrainage makes possible a warmer soil. This result is of importance at all seasons of the year, but particularly so in the early spring. Underdrainage induces earlier germination and the season is made both earlier and longer.

Another early spring advantage of underdrainage is that plowing may be done much earlier and with greater ease.

Underdrainage improves the texture of the soil itself by developing the drainage pores, promoting root development, permitting deeper cultivation, etc.

Underdrainage increases the available depth of soil, which is equivalent to increasing the available acreage without adding materially to the amount of cost of manipulation.

Underdrainage provides a control over irrigation and permits a more economical use of water, preventing surface waste when large heads are used.

Underdrainage increases the available moisture in the soil itself instead of decreasing it, as is feared by many. This is due to the fact that the plants develop a deeper and more complex rooting system which comes in contact with a greater number of soil particles and consequently a greater surface of water film area.

For the same reason, underdrainage increases the available quantity of plant foods.

Deep rooting in the spring also insures against drouth. Plants grow-

ing on drained soil are not so liable to injury due to water shortage in the summer. This is of special importance on tracts that have late water rights, since crops are more likely to be matured before the supply is cut off; but failing this, they have an increased underground supply of moisture due to underdrainage.

Beneficial bacterial activity is largely suspended in cold, wet soils, and such activity is necessary to the manufacture of plant food and its conversion into available form. Underdrainage increases the zone and intensity of such bacterial activity.

The water developed by underdrainage is brought to the ground surface where it is available for re-use either by the owner or by others to whom it may be rented or sold. Drainage water, even from tracts that have been salty, may not be injurious if used on drained land, since the salt content is reduced rapidly to a safe percentage, but this should be determined before such water is used.

A WIDE-AWAKE CONSTABLE

"Ye say ye ain't been speedin', eh?" said Silas, as he stopped the car.

"Nary a speed," said the chauffeur, trying to be amiable.

"When did ye leave Quinceville?" demanded Silas, suspiciously.

"Five o'clock this morning," said the chauffeur, with a wink at his companion.

"Five, this mornin', eh?" said the constable catching the wink. "Taken ye six hours to come four miles. Wa-al, I guess I'll run ye in, anyhow, only I'll change the complaint from overspeedin' to obstructin' the highway."

HOW HE STOOD

In the midst of an election in Denver, a little girl sat in church with her suffragette mother, listening to a minister who was preaching with much earnestness and emphatic gestures. When he had finished, the little girl turned to her mother and asked:

"Mother, was he for or against God?"



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THE PROPER SIZE OF

IRRIGATION STREAM

By Prof. O. W. Israelsen of the Utah Agricultural College.

Intelligent irrigators realize that economy in the application of irrigation water to light soils is dependent very largely on the size of the stream which is used and upon the area of land to which it is applied at one time. There is tremendous need for improvement of our Utah practice in the adjustment of the size of irrigation streams to the porosity of the soil which is irrigated. Recent observations in the Southern part of the State brings this phase of irrigation work very forcibly to mind.

Experimental results recently published in Bulletin No. 3 of the California State Engineering Department indicate very strikingly the affect of the size of stream on the quantity of water, which was required to cover typical light, porous soils in California. These experiments indicate that when the size of stream applied to a one-acre tract was equivalent to a little less than 5 cubic feet per second or about 2250 gallons per minute nearly 3 acre-feet of water was required to cover the one acre. When the effective size of irrigation stream was increased about four times, or in other words when the same stream was applied to a piece of land of only one-fourth the area, very much less than one-fourth of the proportionate quantity of water was required, the entire tract of land being covered by an average of seven-tenths of a foot, seven-tenths acre-feet per acre.

Irrigators can ill afford to ignore this very important phase of irrigation practice. They should attempt to study their various soils with care in order that they may obtain a proper balance between the size of stream used and the width and particularly the length of land to which it is applied. The efficiency of applying a given stream to large or small tracts may easily be judged by the quantity of water which is required to cover the land in one irrigation. In case much over 7 or 8 inches depth is required at one time it is quite safe to conclude that some of the water is being lost by deep percolation and that such practice is not economical.

SENSE AN ASSET

Common sense is the farmer's greatest asset. It implies not only a breadth of view, but a practical knowledge of

various industries. The general farmer must be, to a great extent, a mechanic, a naturalist, an agronomist, a livestock specialist, and a business man. Yet his understanding of all these lines must be well balanced. He must guard against specializing in one subject to the neglect of the others. If he tinkers with his automobile when he should be cultivating corn, he may eventually have a good running machine, but it is doubtful if he will have much of a corn crop.

Few farmers, it is true, have an equal grasp of, or an equal ability, in all lines pertaining to agriculture. It is only natural that they should take greater interest in one division of industry than in another.

Likewise, the student who attends an agricultural college, if his ultimate object is to learn the business of farming, does well to get a proper understanding of values. When he returns to the farm he will have learned a number of things that his father does not know. Yet if his father is making a success of farming, he should not be hasty in condemning his methods. His college training should enable him to improve these methods. He should not be the slave of any one system or branch of agriculture, unless he is certain that greater success will result by adopting it. His technical training should not render him impervious to further improvement. If local conditions demand a different application of science, he should be capable of adapting his knowledge to the change. He should value an idea for what it is worth, no matter from what source it may have sprung. This is only common sense.

There is prejudice among some farmers regarding the practical value of an agricultural education. If there is ground for such prejudice, it is probably the observation of some persons who are as much at sea with knowledge as they are with ignorance. If an agricultural education fails to benefit the student, the failure must rest with the student himself. If he hasn't any sense when he comes to college, he cannot expect to leave with any.

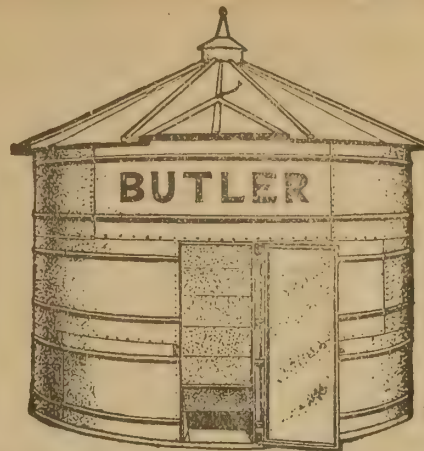
There are many successful farmers who never had the advantage of a technical education, but they have succeeded not because of the lack of such education, but in spite of it. The chances are that if they had been more thoroughly educated they would have attained even greater success—and this with a less expenditure of energy.—Induserlist.

WORLD CROP SHORTAGE GUARANTEES GOOD PRICES S. D. Gromer.

World crop conditions warrant increased production.

The wheat crop of the world in 1916 was 25 per cent less than the wheat crop of 1915. Also there was a shortage of potatoes, corn, beans, and other crops. Because of the war, the demand has been enormously increased. From now until October and after that, if we do not economize what we have and raise a bountiful crop this summer, the world will face the greatest crop shortage that it has faced in decades. At this time the situation is doubly critical. We are engaged in the greatest and most destructive war of all history. Our allies are short of food for several reasons. Even in normal times, they make heavy importations but because of the war they have been unable to produce normal crops.

Then there is the world shortage, and let it be remembered that the menace of the German submarine has not yet been controlled. It is very probable that staple crops will bring satisfactory prices for the following reasons: When the new crop is harvested, practically all the granaries and elevators of the world will be empty. Again our allies will very probably not have a normal crop. The public press reports that we are to lend them from three hundred million to four hundred million dollars a



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month, practically all of which is to be expended in the United States. Further the United States will spend billions of dollars to equip and maintain the army and navy. Nearly all of this amount will be expended for tangible goods or services. Is it not reasonable then that there will be work for every body on the farm, in the work-shop, in transportation, in the army and navy and in civil life? It would seem that this is to be a

period of tremendous activity at good wages and remunerative prices for all products. The farmer has a double responsibility. If our allies are starved-out the brunt of the struggle will fall on us. The farmer must produce and save this year enough to feed not only ourselves but our allies. If we succeed in winning the war, the world will probably be democratized and there will be good prospects of its disarming and great wars may cease.

LIVE STOCK

SELF-FEEDER FOR PIGS.

Experiment Shows That for Fattening It Compares Favorably with Ordinary Hand Feeding.

The value of the self-feeder method of fattening pigs was demonstrated in an experiment recently carried out at the experimental farm of the Bureau of Animal Industry. The object was to determine the value of this system as compared with the ordinary method of hand feeding.

The pigs used in the experiment were grade Berkshires farrowed in the fall of 1915. They averaged 93 pounds per head when the experiment started. They were fairly uniform in size and age, but were not the best pigs in the fall farrow.

The hand-fed lot were fed three times daily, the amount being governed by the appetites. The ration given the hand-fed hogs was composed of 5 parts corn meal, 4 parts middlings, and 1 part tankage. The corn meal and supplements were mixed dry. Just before feeding, the amount to be fed was weighed and then mixed into a thick slop, enough water being used to make the slop pour out of the bucket without sticking. The feeding was done at 7 and 11.30 o'clock in the forenoon and 4.30 o'clock in the afternoon.

The self-fed lot had free access at all times to corn meal, middlings, and tankage in separate compartments of a self-feeder. Close watch was kept on the feeder, and a supply of each feed maintained.

Both lots of pigs were kept in dry lots a quarter of an acre in size. The pigs were given ample room for exercise and sufficient shelter. The pigs in both lots had access to a mineral mixture composed of—

Charcoal	bushel.....	1
Hardwood ashes	do.....	1
Salt	pounds.....	8
Air-slaked lime	do.....	8
Sulphur	do.....	4
Puwerized copperas	do.....	2

Summary of results.

Feeding period, Feb. 22 to May 2, 1916—70 days.

	Hand-fed lot.*	Self-fed lot.**
Number of pigs.....	9	9
Average initial weight, pounds.....	94.00	92.00
Average final weight, pounds.....	167.50	205.00
Average gain per pig.....	73.50	113.00
Average daily gain.....	1.04	1.61
Feed eaten daily per pig, pounds.....	2.13	5.46
Corn meal.....	1.70	.81
Middlings.....	.42	.28
Tankage.....		
Average daily ration, pounds.....	4.25	6.55
Pounds of feed per 100 pounds gain.....	410.00	405.00
Cost of 100 pounds gain.....	\$6.24	\$5.67

*Ration: 5 parts corn meal, 4 parts middlings, 4 parts tankage.

**Ration: Corn meal, middlings, tankage.

The cost per ton of feed used in the experiments was as follows: Corn meal, \$27; middlings, \$30; tankage, \$50.

All the pigs in the self-feeder lot maintained keen appetites during the 70 days of feeding. The hand-fed pigs averaged 94 pounds per head and the self-fed pigs 92 pounds per head at the beginning of the test. At the end of 70 days the hand-fed pigs averaged 167.5 pounds and the self-fed pigs 205 pounds, 37.5 pounds more than the hand-fed pigs. The self-fed pigs consumed a greater quantity of feed per head during the test than the hand-fed pigs, but it took only 405 pounds of feed to produce 100 pounds of gain in the case of the self-fed pigs at a cost of \$5.67, while the hand-fed pigs produced 100 pounds of gain at a cost of \$6.24.

The self-fed pigs made a better showing, surpassing the hand-fed lot in both rate and economy of gains. The results of the experiment clearly show that for quick fattening the self-feeder is very practicable.

HOGS AS GRAZERS

Perhaps the high price of grain will awake farmers to the full appreciation of the grazing ability of hogs. There never was so great an incentive to save grain and use green forage. It is generally understood now that profitable hog-feeding in summer involves the use of pasture of some kind, but there is more difference in hog pastures than many people suppose. However a few men realize the importance of ample growth and tender palatable forage in a hog pasture, and they profit by the knowledge.

Very often the only hog-tight field on a grain farm is the small grass pasture near the barn that serves for all kinds of stock. Horses and sheep keep the grass too short for cattle or hogs. Instances have probably come to notice when hogs on such a pasture last year did not return market price for the grain they ate. Other farmers nearby whose hogs ran in alfalfa, clover and rape figured that they got much more than market price for the grain fed, and in some instances twice as much. This means that their hogs in good pasture probably made twice as much pork from each hundred pounds of grain as was made by the hogs on short grass.

The hog will eat an abundance of green forage if given a chance. The important thing to bear in mind is that the better the forage the more the hog will eat of it, and then the more grain there is left for other purposes. Good succulent pasture crops like alfalfa, clover or rape often make 400-800 pounds of pork per acre besides what can be accounted for through the grain fed.—C. W. Hickman.

INOCULATE BROOD SOWS.

Brood sows, regardless of the stage of pregnancy, may be safely treated for hog cholera, according to specialists of the United States Department of Agriculture. If infection has already appeared in a herd, it is generally conceded that without treatment the loss will be from 80 to 85 per cent of the herd, and that pregnant sows will likely abort, while sows that live through the disease will not breed until they have recovered fully. Even if the disease does cause the sows to abort, the treatment may bring the sows through and enable them to recover more rapidly than if they were not treated.

The best method of inoculation for brood sows—whether by the simultaneous or serum-alone treatments—is a matter of choice, the specialists say, as the results have been practically the same in field experiments with both methods. In this connection department specialists point out that the simultaneous treatment, when properly applied to healthy brood sows, does not produce sterility, as some persons may believe. The fact that hyperimmune sows—that is, sows that are used for serum production and have received enormous doses of hog-cholera, virus general farrows normal litters, confirms this statement, the specialists say.

AGE OF THE HORSE

As long as the horse has been in the service of man it has always been desirable to know how old it was.

Some people are satisfied to know whether a horse is young, middle aged or old, but usually it is of practical use to be able to tell its age more definitely.

In the course of time several meth-

ods of doing this have been advocated.

1.—The age may be told by examining the jaw to tell whether a horse is young adult or old.

2.—By raising the skin on the forehead and then letting it go, a horse's age can be approximated. If it returns quickly the horse is young, and according to the Arabians, it will be considered, in case of a male, good for use as a stallion. If the skin remains wrinkled for a while the horse is old. Aristotle preferred to use the skin on the lips to that of the forehead.

3.—The nodes or knots on the tail are an index as to age. These nodes are the transverse processes of the first to third vertebrae. The first pair should appear at 13 to 14 years, the second at 17 to 18 years and the third pair at 21.

4.—Examination of the ribs is of some value for age determination.

5.—The most accurate method is the examination of the teeth.

The teeth present a series of landmarks. They appear, develop, wear off, are shed, and succeed each other with a regularity which the veterinarians have learned to recognize and to determine scientifically.

The front teeth 12 in number, are spoken of as the incisors. The upper incisors are known as the superiors and the lower as the inferiors. The central pair are called the pinchers or nippers, the next pair, the intermediate, and the third pair, the corners. In the mouth of the male horse, are four teeth (one in each quarter jaw) known as canine teeth (tusks, fangs). These are located about one inch behind the incisors.

The cheek teeth, six in each quarter jaw are generally termed molars and numbered from one to six.

The first set of teeth are called temporary teeth or milk teeth, while the teeth that succeed them are known as the permanent teeth.

The first step in examining the horse's teeth is to part its lips and notice if the incisors are composed of temporary, permanent or both temporary and permanent teeth. Then notice if the teeth are normal in number, if they have the normal position, direction and size, if they correspond with each other, and if the anterior face and free border are intact, and whether or not they have been subject to fraudulent alterations.

The second step is to open the

horse's mouth and see the form and detail of the dental table of the incisors and their direction and length.

In order to make use of our observation, we must know the developments, construction, eruption, and wear of the teeth.

When the colt is born it generally has no teeth, but by the first week the temporary pinchers become apparent. In the fifth and sixth week the intermediates, and at eight or 10 months the corners are developed. The posterior border on the intermediates shows wear in six months, and on the corners at 1½ to two years. If in doubt the molars should be examined to see if the fifth molar is through or not. At 2½ years the temporary pinchers should fall out and give room for the permanent ones. These

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should be out and in wear at three years.

At 3½ years the temporary intermediates should fall out. The permanent intermediates should replace them and be in wear at four years, while at 4½ years the temporary corners are shed. The permanent corners are in use at five years.

The posterior edge of the incisors come into wear about one year after the anterior edge. This aids in the determination if the corner teeth should have been extracted, in order to pass the horse off as a year younger.

At six years the posterior border of the corners come into wear, the notch of the superior corners start forming and the cups in the inferior pinchers are worn out. At five years the horse is said to have a full mouth and now the only changes are those made by growth and wear.

The most important of these changes are (1) the disappearance of the cups, (2) the shape of the dental table, (3) the length of the teeth, (4) the angle in which they come together, (5) the incisior arch and (6) the notch in the superior corner teeth. Of these the first two are of greatest significance.

The cups disappear regularly in the following manner: The inferior pinchers at 6, intermediates at 7, and corners at 8 years, the superior pinchers at 9, intermediates at 10 and corners at 11 years.

The shape of the wearing surface of the teeth changes with increased age. At 5 to 6 years this surface or dental table has two broad sides. At 7 to 9 years the tables show an oblong outline with the transverse diameter much the longest. At 10 to 14 years the pinchers and the intermediates show a round or four-sided outline. At 15 to 17 years the teeth show a well marked three-sided table; 17 and over, the two-sided period where the transverse diameter is smaller than the posterior, anterior diameter.

These changes occur provided the growth and wear of the teeth are normal. However, in most cases we find that the teeth are too long and not worn enough so we must add one, two or perhaps three years, according to the exact age.—A. P. Hendriksen.

The angle with which the teeth come together, as seen from the side, is getting smaller every year. Looking at the teeth from the front we see that the spaces on the mucous membrane between the roots of the teeth, are getting wider on account of the teeth getting more narrow as they grow out. The notch on the superior corner teeth starts at 6 years, gets bigger for a few years and is then worn off.

Canine teeth appear at 3 to 6 years, temporary molars in the first two weeks; permanent molars, the first at 2½ to three years.

By taking into consideration both the disappearing of the cups and the shape of the dental table, and the length an angles of the teeth, we should be able to determine a horse's age close enough for practical use.

The older the horse is, the more un-

certain is the rule, but on the other hand the less important it is to know the length of the teeth, to get the right

CAREFUL HANDLING PAYS Hay, Grain and Seed Bring Better Prices if Properly Harvested, Prepared and Stored.

Careful handling often will get a high grade and a relatively high price for grain and hay which otherwise would grade low and sell low, say specialists of the United States Department of Agriculture.

It is worth while for producers to keep this fact in mind now that the harvest season for grain and hay is approaching in many sections. The supplying of the best grades of grain and hay on the market is always light. This frequently may be attributed directly to poor handling and care. Quality always demands the best price, hence the greatest care should be exercised in harvesting and storing.

Practical Hay and Grain Hints.

Do not store damp grain or hay unless you have adequate facilities for frequent "turning" otherwise they are likely to go out of condition. Few farmers realize how small a per cent of moisture will cause otherwise good grain or hay to heat and deteriorate.

Never bale damp hay.

If your grain contains a large per cent of foreign material, clean it. It keeps better.

Feed low grades and screenings on the farm.

Do not mix varieties. In most cases it can be avoided. It nearly always causes the commodity you are selling to grade low.

Marketing and Storage Suggestions. Remember at all times that there is nearly always a better market for clean, dry and unmixed varieties of grain or hay than for that which is damp, dirty, musty, mouldy, and off color.

Begin now to arrange for proper harvest and care of the coming corn crop. Remember deterioration of your crop this year because of careless handling and storage will mean an enormous loss both to you and the country.

Begin now to study your probable feed requirements for the coming year, and determine what quantity you will require and whether you will retain enough to meet your needs or purchase it.

Take Care of Next Year's Seed.

While it appears that there will be plenty of good seed winter wheat, seed winter rye, and seed of other fall-sown crops if the available supply is properly distributed, everyone who is contemplating sowing an acreage of any of these crops this fall should provide for his seed supply as soon as possible. It will be necessary to ship seed wheat into those sections where the wheat winter-killed badly. In other sections which produced a good crop, the best of that crop should be conserved either on the farms or in country elevators to meet the local and distant demands for seed purposes. If this precaution is taken there will be no need of sowing wheat, procured at the last minute, which, though of commercial value for milling, feeding, or other industrial purposes, is unfit for use as seed.

He who saves for himself for sowing, or aids his neighbors or others in securing seed that he knows to be good is rendering the patriotic service of facilitating increased production.

CLEAN AND REUSE

OLD PARAFFIN

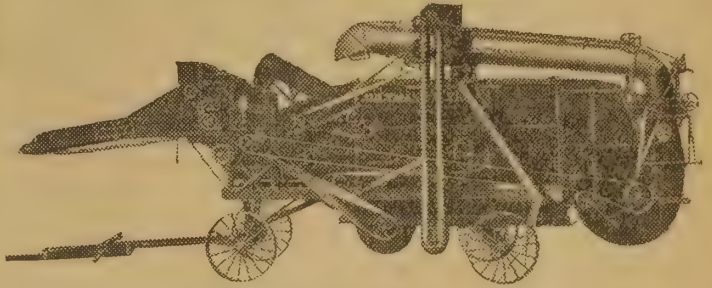
Paraffin that has become unclean through usage in canning and preserving, may be cleaned and reused. Don't throw it away because dirt and trash have become mixed with it. Many times paraffin can be cleaned with a brush in cold water. If this does not remove all the dirt, says the United States Department of Agriculture, heat the paraffin to boiling and strain it through two or three

AULTMAN-TAYLOR

AMERICA MUST FEED THE WORLD!

It's a big problem, but America is equal to the occasion. It's the duty of every American to help conserve the nation's resources. Especially is it important that we save the 1917 grain crop. You must save it! You can save it all with a

NEW CENTURY THRESHER



The New Century is a whirl-wind thresher. It gets all the grain out of the straw. The Universal rotary rack does the business. It kicks or agitates the straw twice with each complete revolution of the crank shaft, or, in other words, gives double the separating capacity of the ordinary vibrating type of rack used in other machines. In the New Century the movement of the straw is constant; it never becomes compressed as is the case in other machines. This construction means a machine steady in motion, light in weight and in draft, low in upkeep cost and large in capacity.

New Century machines are built in seven sizes—a size to fit your power. CATALOGUE AND FULL PARTICULARS ON REQUEST. WRITE OR CALL AT OUR BRANCH.

THE AULTMAN & TAYLOR MACHINERY CO.,

DEPT 10, MANSFIELD, OHIO.

Branch House, 525 West First South Street

SALT LAKE CITY

CHARLES H. DOBSON, Manager.



Have You a Son of Your Own?

Is there any other young man in your community in whom you are interested?

Are you anxious for these young men to succeed in life?

Do you know that more men fail because they are not suited to their work than from any other cause?

These questions will help you to decide whether or not you should have the new book, entitled

The Young Man and His Vocation

by Dr. Franklin Stewart Harris of the Utah Agricultural College.

Dr. Harris has made a special study of the industrial needs of young men. He has prepared two manuals on vocational subjects for the Young Men's Mutual Improvement Associations, and he is thoroughly familiar with the problems of the young men of the West.

His book contains the cream of his writings on the subject.

Can you afford to have your son get along without this book? Send \$1.25 Today to the

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Manufacturers constantly writing us for patents. List of inventions actually requested and book "How to Obtain a Patent" sent free. Send rough sketch for free report regarding patentability. Special assistance given our clients in selling patents. Write for details of interest to every inventor.
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Salt Lake City

thickness of cheesecloth placed over a funnel. Or a thin layer of absorbent cotton over one thickness of cheesecloth may be used as the strainer. One straining should be sufficient ordinarily but if the paraffin still is unclean heat and strain again. Any paraffin lodging in the strainer

may be recovered by heating the cloth and pouring off the hot liquid to another strainer.

Little drops of water
Spread upon the land
Make a farmer's bankroll
Grow to beat the band.

SILOS SAVE GRAIN

Can Corn Crop for Cattle—No Tin Needed—Silage Supplies Succulence in Dairy Ration.

Less grain can be fed by many dairymen without reducing milk production, provided they feed more silage and legume hay. Less grain will be available for feeding to cattle, for much more than usual is needed now for human food, and the emergency demands that every effort be made for its conservation. Milk production must be maintained—hence, every effort should be made to substitute other feeds for grain in the dairy ration. To do that the silo will help.

Fruits and green vegetables are canned so as to supply succulent and palatable foods to the family during the winter. Succulence is just as essential to the cow as to a human being. The abundant milk flow obtained from June pasture, to a large extent, is due to the succulence of the grass. Silage provides succulent feed during winter when pasture is not available. With silage in the ration dairy cattle can be kept in the condition of health common to animals on pasture. The digestive system of a cow is well suited for the utilization of large quantities of green grasses and other coarse, succulent material. Silage is palatable and no other feed will combine so well with dry hay and a little grain to produce maximum economical results.

"Silaging" is an excellent way of preserving the mature corn crop or of saving one which for any reason must be harvested before maturity. About 40 per cent of the total food material in the corn plant is in the stalks and leaves. When the farmer harvests only the ears he loses nearly one-half of the crop; on the other hand, when the crop is put into the silo the losses are very small. When drought, frost, or insects attack a field of corn before it is ripe, the entire crop may be lost unless the farmer has a silo ready in which to preserve it.

No feed crops can be so successfully harvested under widely varying conditions as those that are put into the silo. Only in case of drought or frost is it necessary to rush the filling of the silo; rain or dew on the forage does not injure the silage.

The silo at all times, and particularly now, offers to the farmer one of the best means of reducing his feed bills. The present great national emergency places these questions before every farmer who keeps cattle: Have you a silo? If you have not your herd is not most economically fed; why not build a silo and fill it before frost comes? If you have one, is it big enough to supply all the silage your cattle can eat before the next crop is harvested? If not, build another. You can buy one ready to erect, or you can build it yourself. Home-made silos of concrete or wood can be erected with little trouble.

HOGS ON THE GENERAL FARM

Swine are profitably grown in practically every locality and on almost every type of soil. Although the most heavily stocked region is found in the corn belt, the East and the South are increasing the number of their swine at a rapid rate, very largely because of the use of pasture crops to replace part of the grain ration. In fact, hogs are grown under many different methods of farming, and fed upon a great variety of crops, showing that they are well adapted to almost any condition found upon the farms of this country.

An ideal location is on a well drained farm possessing a rich soil that will produce grasses and other forage, as well as the grains needed for fattening the hogs. This does not mean, however, that only those farmers holding rich, level lands should raise hogs, for, as a matter of fact, hogs are most easily handled on farms that are somewhat rolling. For the production of forage crops, the rolling farm is often as good as the level

one, and it often has the added advantage of shade and a better water supply. The hill farmer does not have the best of it in all things, but in many instances he has certain advantages which he does not appreciate.

In locating, the question of a market also must be considered and the facilities for reaching it. Most communities are connected with the large central livestock markets by the railroads, but these will be of little avail if the roads to the railroads are poor. Good roads are of inestimable importance, for, among other things, they enable the farmer to market his products at any and all times.

The number of hogs for each farm must be determined by a study of local conditions and the type of farming. The maximum number of hogs per acre is found on farms chiefly or wholly devoted to the raising of that class of stock; as, for example farms in the State of Iowa, where it is quite common to see farms stocked with several hogs to the acre, while the average for the entire State is one to every three acres of improved farm land. Under average conditions in this country, however, hogs return the largest profit when raised to utilize waste products, and when kept for this purpose alone the number will depend upon the quantity of waste products to be consumed. Skim milk from dairy herds, shattered grain from grain fields, unmarketable products from the truck farm, undigested grain in the droppings of fattening steers, and many other minor wastes on the average farm, are examples of feedstuffs which would be wasted were it not for their utilization by the thrifty farmer for the production of pork.

In order to utilize some of these products it is necessary to have a number of pigs on hand for a relatively short time on account of the perishable nature of these feeds. The rest of the year the fattening pigs and the breeding stock must be maintained upon feed raised expressly for their consumption, and while they are not kept at a loss during this time, still the greatest profit is derived when they are eating the cheap feed in the form of waste products. The number of hogs which can utilize the waste to the best advantage, therefore, should be the limiting factor in determining the number of hogs to the farm. On farms in the corn belt where hogs are raised simply to market the corn crop on the hoof, the number is controlled by the amount of corn which can profitably be raised to fatten them.

CAUSE IT

A cynical-minded gentleman was standing in front of an exhibition of local talent labeled "Art Objects."

"Well," he announced to the attendant in charge, "I should think Art would object, and I can't say that I blame her."

THEY ALL LOOKED ALIKE

The train was passing a broad lake on which were swimming a multitude of birds. Several ladies and gentlemen became involved in an argument as to whether or not the birds were wild ducks. Finally it was agreed to refer the matter to the dignified passenger with alfalfa whiskers. The latter shifted his gaze from his newspaper to the lake and quietly replied, "About half of them are ducks," then resumed his reading.

"But," exclaimed one of the ladies, "they all look alike to me. You say half of them are ducks. Do tell what are the others?"

"Drakes."

SAVING THE BOY

"Oh, hubby, such an instructive lecture. The gentleman told us that what 'What you eat you become.'"

"Huh?"

"What you eat you become."

"Take that all-day sucker away from Tommy."—Courier-Journal.

To Buy FARMS To Sell

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

\$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

\$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918.

Hardest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enormous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reaper hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful berry, also the grand prize contest.

H. A. PINEGAR

Wellington

Utah

IDAHO RANCH BARGAIN

160 Acre cattle ranch, 4 miles from county seat, railroad, etc. All splendid farming land, running water, 50 acres good wheat, 60 acres national meadow, fair buildings. Price \$4,700. Good terms.

FEDERAL LAND COMPANY

Ogden

Utah

PLOWING CONTRACT

2,000 acres

We will let a Contract for plowing about 2000 acres of land, to the right man at the right price. Work to start as soon as possible.

Call on or address

Delta Land & Water Company

Delta, Utah.

COMBINED GRAIN AND CATTLE RANCH

Here is an opportunity for some farmer with a small farm and a growing family to make a turn that will make them all wealthy. Two business men, living in Salt Lake City, have been trying to run a ranch by mail. They have decided that they cannot make it pay and now are willing to make the right party a fine proposition. If you have some cash, or if you have a small farm, that you desire to turn in for a first payment, here is the chance of a life time.

The ranch is located within 50 miles of Salt Lake City. It is 2 miles from a R. R. Station on main line, the State Highway passes, the school, church, store, are within 1/4 mile, the telephone line pass, and the Forest Reserve is within 2 miles.

The ranch contains 1608 acres, of which 1500 acres are the choicest kind of "Bench Lands," ideally adapted for "Dry-farming." 600 acres of the "dry-farm" land is cleared and being tilled. There is 48 acres fertile irrigated land with primary water right. The improvements are a 6 room log and frame house, stables, corrals, sheds, granaries, extra good fences, wells, windmill, and 30 acres alfalfa. The personal property consists of a Reg. 7 year old Percheron Stallion, 12 horses and mares, 16 cattle, hogs, chickens. Case Tractor Engine (steam), and full complete outfit of implements, wagons, etc.

The whole proposition can be had for \$18.00 per acre, or \$30,000.00. They want enough cash to make them safe, and will give 10 years on balance at 6 per cent. If you want to trade in other property, let us hear from you.

BURT & CARLQUIST COMPANY
Was. 350 No. 40 So. Main St.
"See Us About Real Estate."

Your Chance to Make Some Money

And secure a good farm at the same time.

The sale of the entire Elberta Irrigation Project has been postponed by the District Court for 30 days.

Several big successful companies are going to bid on it. Under new management there will be land boom at Elberta.

One company agrees to bring 100 farmers from the Dakotas.

Our Proposition

I have some land that can be secured at a bargain 25 to 50 dollars less than the other land will sell for. It is ideally located. Best kind of land with primary water right. The way to secure a good farm at a low price is to buy now, before this sale is put through.

Can make terms to the right man. It is a real bargain if you want a farm.

Write me today so we can get together.

W. C. Albertson

604 Dooly Building

SALT LAKE CITY UTAH

FREE FARM LANDS

The Pohoant Valley in Utah needs 100 farmers to grow Sugar Beets for a new independent factory.

We have optioned several thousand acres that can be leased free rent for one or two years and nominal crop or cash rent for additional years.

Our committee will show you land free of charge.

THE DELTA COMMERCIAL CLUB
Delta, Utah

MILLARD COUNTY FARMS!

I have an eighty acre improved farm that can be bought for \$50.00 per acre on easy terms. The soil is especially adapted for the production of alfalfa and sugar beets. See me for bargains.

NELS L. PETERSON

Deseret

Utah

DIFFERENT SORT OF MYSTERY

"I wish I knew where my husband was," remarked a lady whose spouse was irregular in his homecomings.

"You mean, I presume," responded her precise friend, "that you wish you knew where your husband is?"

"No, I don't," was the retort. "I know where he is. He's up in his room sleeping off a headache. I want to know where he was!"

Send your order for Butter Wrappers to the Utah Farmer today.

Here and There On The Farm

KEEP GARDENS GROWING

Fight Weeds, Cultivate, Water, and Fertilize.

This is the time of the season when the gardener is likely to allow the weeds to get a start in the garden. Right now the plants need every drop of water, and weeds should not be allowed to rob them. Weeds grow much faster than cultivated crops, and if not destroyed will rob the plants of the moisture they need for forming fruit. Those fortunate enough to possess a private waterworks, or who have city water should make use of the hose to supply the crops in the home garden with needed water. The watering should be done in the evening and by the time the sun rises the next morning the water will have soaked in. The soil should be cultivated about 24 hours after each watering in order to prevent the formation of a crust on the surface. Nothing retains soil moisture like a finely broken surface. Never allow soil in the garden to become baked, as moisture is being lost.

It is an excellent plan to water eggplants, peppers, cabbage, cucumbers, melons, celery, and other crops needing highly fertilized soil, with manure water. Have a barrel covered with a screen in which to prepare the manure water. Give each plant an occasional watering with this and the added growth will repay you.

CABBAGE PESTS

No doubt many gardeners have already noticed the white butterfly with one or two black spots on the fore wings flying about the garden in close proximity to the cabbage plants. The eggs deposited by these insects hatch into the worms that eat the large holes in the cabbage leaves. The house wives have seen these snail like pupae when removing the outer leaves from the cabbage.

By a little effort on our part, these worms can be held in check by using arsenical sprays. Powdered arsenate of lead $\frac{1}{2}$ pound to 25 gallons of water, with a little soap added to make the spray stick better, sprayed on the leaves of the cabbage will do the work. One teaspoonful of Paris Green to one pint of flour, sprinkled over the plants when the worms appear, is also good.

As there are two or three generations of these insects a year in Idaho, it may be necessary to spray several times. If the plants are sprayed late in the season the outer leaves should not be used.

Cabbage aphids also does considerable damage unless held in check. If these lice appear this year, I would suggest that Black Leaf 40, or kerosene emulsion be used. Apply these sprays with considerable force.—C. C. Vincent, Department of Horticulture.

HARVESTING ALFALFA FOR SEED

The alfalfa pods do not set on or ripen uniformly, therefore pods in all stages of maturity and development may be found on the same plant. Besides individual plants, due to slightly varying conditions of soil or moisture conditions may also vary in maturity. With such a crop it is impossible to cut it at a time when all of the seed can be saved, so it is necessary to strike an average and harvest when the largest amount of mature, plump, sound seed may be saved.

Opinions vary widely regarding the proper stage of maturity at which to harvest the crop for seed. The majority of growers secure the best results by cutting the crop when from two-thirds to three-fourths of the seed pods have turned brown. Some growers harvest when only about one-third of the pods are black; others wait as the very ripest seed begin to shatter, while others believe that the

first seed to ripen are the best and harvest the crop a little early. As a rule however, it is better to cut the alfalfa a trifle green rather than let it become overripe. In the latter case the loss of seed from shattering will be considerable in the handling of the crop, while if cut slightly green very little if any shattering will occur if the crop is carefully and properly handled.

The crop may be harvested with a mower the same as for hay. This method is not entirely satisfactory, for some shattering of the seed, is bound to take place. A large per cent of such loss by shattering may be prevented by the use of a windrow attachment, the same as is used for field peas. Besides, the alfalfa may be bunched up in small bunches directly from these windrows, thus saving handling the crop with a rake.

Some farmers are using binders to harvest the crop. Sometimes the bundles are thrown out without binding, while often they are bound and shocked up the same as wheat. This method has some advantages, it leaving the crop in bundles which are easily handled preventing considerable shattering and also keeping the seed from bleaching out if the crop is properly shocked up.—H. W. Hulbert, Farm Crops Department.

FARM FLOCKS OF SHEEP

There are two primary reasons for starting farm flocks of sheep in Idaho. In the first place, the nation normally produces but about one-half of its wool supply and will need in the months to come far more wool than in times of peace. The foreign supply is largely cut off and the nation's need of wool is so serious that unusual effort must be made toward increased production of the problem of clothing our armies and civilian population will be a most serious one. In the second place, a small flock on the farm yields a double source of profit in the mutton and wool and carries other advantages in connection with diversified farming. Wool now sells at 50 to 60 cents per pound. Lambs have sold in Chicago at the unprecedented price of \$20 per hundredweight.

A plan has recently been proposed by which one million ewe lambs that would otherwise go to slaughter will be saved from that end and sent to farms in various parts of the west and middle west. The wool situation from a national point of view is so serious that the national government has encouraged this plan looking toward increased production of both mutton and wool. Certainly ewe lambs should not be sent to slaughter this year except for unusual reasons.

Many questions in regard to starting a small flock are coming to the Animal Husbandry Department of the College of Agriculture.

Pure bred ewes are not necessary and if the farmer has had no experience with sheep he should start with grades. The farm flock should consist of 10 to 50 head of ewes. Less than 10 take time and attention and yield a small income. More than 50 become a large problem in connection with the farm unless special facilities are available for handling sheep.

Thrifty ewes with reasonably tight fleeces of fine, medium or long wool blood are suitable for foundation. The ram to head a flock should be a pure bred of either black face or long wool blood. The Hampshire, Shropshire or Oxford ram sires growthy lambs of thick conformation that sell well for mutton. If one likes the long wools he should use a thrifty, deep-bodied, strong-backed and ample fleeced Lincoln or Cotswold. In Idaho the Cotswold is favored for the range and the Lincoln for the farm.

There are many important problems of farm flock management that

require much space for discussion. Full information in regard to details of management on the farm are found in Bulletin 96 of the Idaho Experiment Station prepared by the Animal Husbandry Department. A copy of this bulletin will be sent upon request.—E. J. Iddings, Animal Husbandry Department.

LEGHORNS PRODUCE EGGS

AT LESS COST

Superiority, as Layers, over General-Purpose Breeds Shown by Recent Feeding Test.

Leghorns produce eggs cheaper than hens of the general-purpose breeds—Plymouth Rocks, Wyandottes, Rhode Island Reds, and Orpingtons. This fact, which confirms the belief and experience of commercial poultry farmers, was one of the results obtained in a rather extensive feeding test recently reported by poultrymen of the United States Department of Agriculture. Because they lay as many or more eggs, eat only about 55 pounds of feed per head as compared with 70 to 85 pounds eaten by the general-purpose breeds, and because their egg yield very materially exceeds that the general-purpose breeds during their second and third laying years, Leghorns, the specialists say, undoubtedly are more profitable to keep for the production of eggs only.

In this test the feed cost of a dozen eggs for one of the Leghorn pens was 7.34 cents in 1913 while the average cost of all the pens of the general-purpose breeds was 10.6 cents. In 1914 the feed cost of a dozen eggs for the same pen of Leghorns was 8.7 cents as against an average cost of 15.1 cents for the second laying year of the general purpose pens. During their third laying year the cost of a dozen eggs was 8.8 cents compared to 18.6 cents for the general-purpose fowls. The total value of eggs per hen over feed cost in the Leghorn pen for three years was \$6.84 against \$4.30 for the general-purpose hens. The highest egg production obtained in any of the feeding experiments up to 1915 was by a pen of Leghorns which laid 157.6 eggs per hen, at a feed cost of 6.7 cents a dozen.

The Leghorns produce smaller eggs than the general-purpose breeds. The average weight of the eggs of a pen of Leghorns during the first laying year was 1.42 pounds per dozen as against 1.53 to 1.58 pounds for the other pens. However, Leghorns laying eggs weighing 1.50 pounds per dozen or even more, the specialists say, have been selected and bred by many poultrymen. An examination in May, 1915, of 500 eggs from 3 Leghorn pens showed that 31 per cent weighed more than 2 ounces apiece, or 1.50 pounds to the dozen.

The value per dozen of the eggs produced by the Leghorns was from 1 to 3 cents less each year than the eggs of general-purpose hens. This difference is due to the fact that the general-purpose breeds are better winter layers than the Leghorns, while the latter give a higher production in the spring and summer. Very few Leghorns become broody, which probably materially affects their egg yield as compared with the general-purpose breeds. Better fertility in the eggs, especially with stock confined to the yards, is more often secured with Leghorns than with the general-purpose or any of the heavier breeds.

POSSIBLY SO

Mary—"Did he really say he thought my hair was lovelier than yours?"

Alice—"Yes. He said he thought it cost more."

NO PLACE FOR THE PIGS.

Visitor—"My good man, you keep your pigs much too near the house."

Cottager—"That's just what the doctor said, mum. But I don't see how it's a-goin' to hurt 'em!"

Farmers' Market Place

DUROC BRED SOWS

We are offering a few choice fall gilts, sired by the Grand Champion Richards Defender, and bred to our new giant herd boar, Richards Pathfinder. We purchased Richards Pathfinder in Iowa last December and he is the largest boar of his age we have ever seen. These good gilts will farrow during August and we are pricing them low, as we need the room.

We guarantee to please you or will refund your money and pay the express charges both ways.

RICHARDS LIVE STOCK CO.

Virginia, Idaho

"Home of the Champion Durocs."

FOR SALE

1100 pound Hambletonian driving mare, 9 years old, harness and one seated top buggy, all in A 1 condition. A bargain.

MRS. W. E. REYNOLDS

Stockton

Utah

FOR SALE

At a bargain one Hart Barr 30-60 tractor, 1915 model, in good working order with gearing new. Horses good as part payment. Apply A. L. Cook, Half Mile West of Lone Rock, 7 Miles West of Tremonton, Utah.

FOR SALE OR TRADE

A Registered Jersey Bull 18 months old, or a Registered Jersey Bull 5 years old. Address

UTAH FARMER

FOR SALE

Eight registered Jersey cows.
Three registered Jersey bulls.
Nine registered Jersey heifers.
Nine pure-bred Jersey cows.
FRANK M. DRIGGS, Ogden, Utah
Phone 108 Ogden, or 8-J Huntsville, Ut.

WHO PRINTS YOUR BUTTER WRAPPERS?

We are printing thousands of Wrappers for your fellow dairymen and are sure that we can please you.

Our specially prepared ink and vegetable compound paper combined make the best wrapper on the market.

100 Butter Wrappers.....	\$.90
200 Butter Wrappers.....	1.25
500 Butter Wrappers.....	2.00
1,000 Butter Wrappers.....	3.00

Check or money order must accompany order.

PREPARE FOR 1918 WHEAT CROP

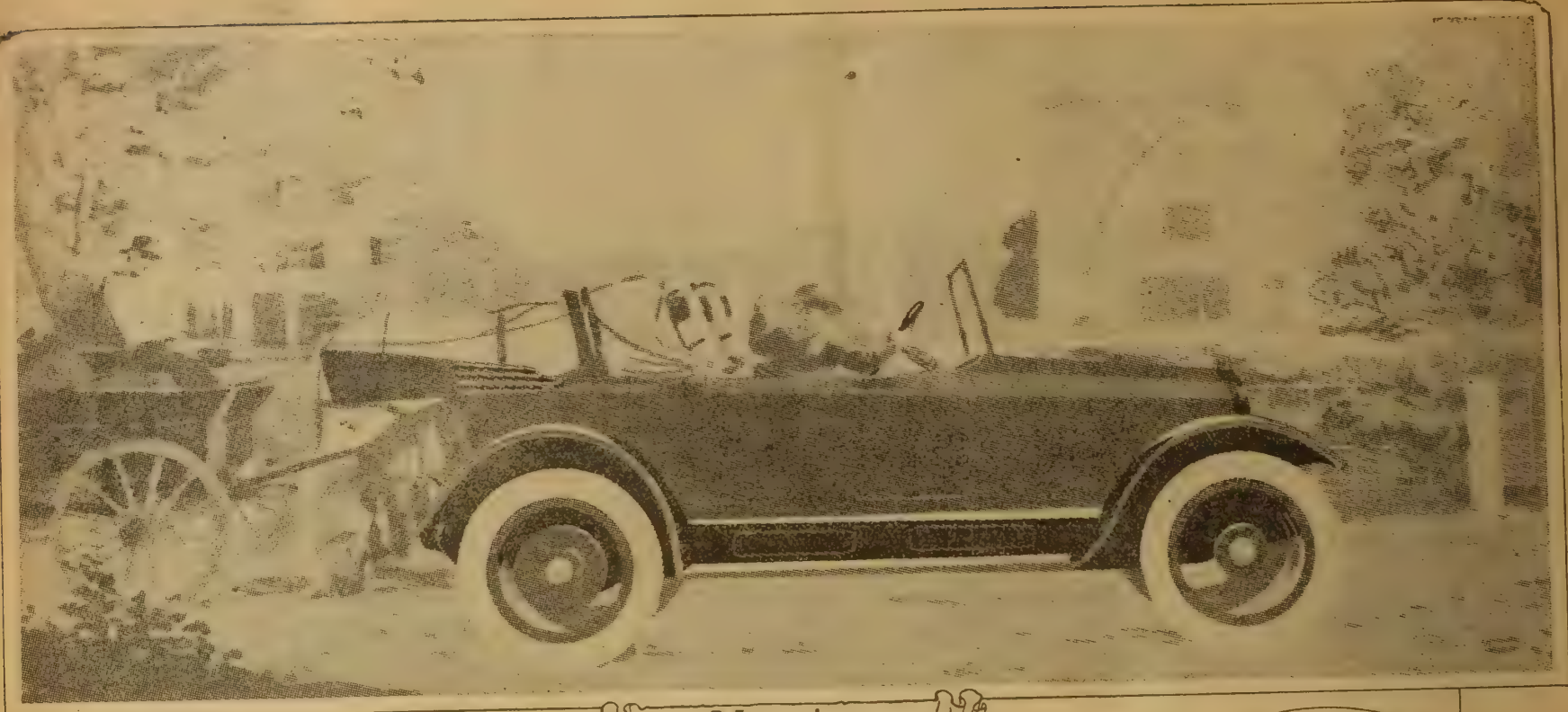
(Continued from page 3)

every good farmer knew was desirable. Patriotic duty called for a large acreage to be planted even if there was a possibility of failure.

The same excuse cannot be found for 1918 crop. We now have sufficient warning of the necessity of a large production and we can be sure that prices will be high. The thing to do then is to prepare thoroughly to take advantage of the situation. Fit every available acre of wheat land in such a way that it will produce a maximum crop. An excellent opportunity is offered for the wheat raiser to make good profits, to respond to a patriotic duty to his country, and to render a great service to mankind. Who is able to resist such an urgent combined call?

HE WANTED TO LEARN HOW

Burglar—"Don't shoot me, sir." Householder—"On one condition, that you tell me how you got in without waking my wife."



Morning

Overland

TRADE MARK REG.

— the Time Saver

It's time now for speed and efficiency.
No one now has *time* to waste.
Speed up your work—and speed up
your play to keep fit for your work
—get an automobile.

No one now has *energy* to waste.
Get a car that's big enough not to
cramp you, that rides easy and
won't tire you.

No one now has *money* to waste.
Get Overland Model Eighty-Five Four.
True efficiency and true economy point
to this one car as the compass points
to the North Pole.

No other car of such comfortable size
has such power with such economy
of operation.

No other car of such comfortable size is
so sturdy—so economical of upkeep.

No other car of such comfortable size
has been built in such quantities
and for so long a time.

No other car of such comfortable size
sells for so little.

It's the car for you and the time to
buy it is now.

Have efficient equipment for efficient
living.

Get your Overland Model Eighty-Five
Four today.

Catalog on request. Please address Dept. 1101

Willys-Overland, Inc., Toledo, Ohio

Overland and Willys-Knight Motor Cars and
Light Commercial Cars

Five Passenger
112 inch wheelbase
Famous 35 horsepower
four cylinder
Overland motor
Cantilever rear springs
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starting and lighting
Four inch tires
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on the steering column

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Night

Noon

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Model
Eighty-Five
Four

Five passenger touring

\$895

Three passenger roadster

\$880

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THE UTAH FARMER

Devoted to Agriculture in the Rocky Mountain Region

OFFICIAL ORGAN UTAH AGRICULTURAL COLLEGE
LEHI AND SALT LAKE CITY, UTAH

VOLUME XIII; No. 51.

JULY 28, 1917

We Should Double the Number of Dairy Cows on Our Farms. Now Is the Time to Make the Start



PURE BRED COWS OF STANDARD BREEDS ARE ALWAYS THE BEST.

THE MAN AND THE COW

E. A. Janett.

In order that the dairy business may prosper two things are necessary, they are the cow and the man. Both, of the right kind, are very scarce. You have to breed and develop them. Just because a cow gives milk is no sign she is a dairy cow, or because a man can milk cows that he is a dairyman. In order to produce milk at a profit, to successfully conduct the dairy business you must have a man who knows the business, more than that a man who is will study the business for new conditions which must be met all the time. The work is not learned in a day it takes years to master it. Once a man learns the game, as we say now days, there is no trouble for him to make money out of it. For any young man who will make a

study of dairying will have no trouble to sell his service if he can not work for himself. The future of dairy products is assured, for it is being recognized by all food experts that dairy products are important in our food rations. A good cow if well managed will give a larger return for food consumed than any other animal. The cow is the conservation of wealth, she manufactures from the feed given her the highest priced products of the farm. What is still important in our farming she does not draw anything from the farm but is of the greatest help in maintaining the fertility of the soil. When you find a good cow one that is capable of producing a large yield of milk and butter, she is worth more money to the dairyman

than the average man will believe. Cows when carefully selected, given good care and the by-products properly taken care of, will bring more money both direct and indirect to that community than any branch of agriculture. The proper selection of a cow is the basis of profitable dairying. To know just how to select them is of utmost importance to the dairyman. The use of the Babcock test and a scale is the only certain way to tell just how much milk and butter-fat a cow is producing. But these alone do not tell what she is capable of producing, nor is it possible to use this test in many cases. Because of poor feed and lack of proper care, a cow capable of producing a large profit, would probably not make a very good

showing if subjected to a test consisting of weighing and testing her milk. To be of value, such a test must extend through several weeks or months, because one or several milkings do not demonstrate a cow's value. To be profitable, she must be a persistent milker. Experience and observation show that there is a close relation between conformation and producing power in dairy cows, just as there is in other animals. No man would attempt to make a race horse out of a heavy Percheron, neither would he expect to do heavy draft work with a light trotting horse. Both of these types are very good for certain purposes, but not at all adapted to others. The same is true with cows. The function (Continued on page 5)

SUGAR BEETS

DR. E. G. TITUS TRACES ORIGIN OF CUTWORMS IN IDAHO

Origin of the cutworm prevalent in the neighborhood of Sugar City, Ida., is reported to have been traced by Dr. E. G. Titus, formerly of the Utah Agricultural College, to the operation of Michigan pea farmers. Pea vines are said to furnish protection for the development of cutworms said to have resulted in the destruction of extensive crops in northern Idaho.

After a vigorous investigation of the cutworm scourge Dr. Titus, who now is assigned as a sugar beet expert for the federal government, says that drastic measures will have to be taken to wipe out further spreading of the cutworm. The development of the pea raising industry in Idaho is said to have begun soon after a number of pearaising farmers had been expelled from the agricultural districts of Michigan.

In tracing the history of the cutworm in the neighborhood of Sugar City, Idaho, Dr. Titus is said to have found it necessary to secure information from the horticultural department of Michigan. There it is reported to have been found that farmers engaged in the raising of peas moved to Idaho after they had been restrained from growing peas in Michigan.

Dr. Titus says that although farmers in Idaho engaged in the raising of peas appear to be prospering, their neighboring farmers are suffering heavy losses from cutworms. There is no known way of exterminating cutworms excepting that of destroying their breeding places. An extensive report is being prepared relative to the new agricultural scourge by Dr. Titus, and it is said that it may be found necessary to restrain pea farmers from further planting their crops in Idaho.

GOOD SUGAR BEET SEED IMPORTANT

To secure a good stand of beets the seed is second only in importance to the well prepared seed bed. No matter how good a seed bed you may have if the seed is poor you are bound to have a poor stand of beets.

The splendid stands of sugar beets throughout the Utah and Idaho territory this year shows that only the best of seed was used. The germination of the seed planted last spring which has been almost perfect and the lack of replanting which has been very insignificant proves that the seed which has been planted is of the highest quality.

Some time ago the Utah-Idaho and Amalgamated Sugar Companies learned that it paid to use only the very best seed that could be obtained. They buy in such large quantities and do what every one should do, make careful germination tests of all seed

they purchase, and in this way protect themselves and the beet growers against poor seed. A good stand of beets is just as important to the manufacturer as to the grower. If the farmer does not get a good stand of beets the tonnage to be manufactured is cut down and the average cost of making sugar is increased. It is with sugar beets as with all other kind of crops, the best seed is the only kind to use. It may cost a little more at times but it pays to give the difference because of the increased tonnage at harvest time.

Germination tests are a great help as to determining the value of any kind of seed. One is able to tell by these tests if the seed will grow when planted. It saves time and labor, very little replanting has to be done when you make careful tests of this kind before planting.

The prospect for a good sugar beet crop is very good and is due largely to the splendid stands of beets secured this spring.

A SHORT HISTORY OF THE SUGAR BEET

By Abel Beck.

In 1747 a German chemist discovered a method of extracting sugar from the sugar beet, and a factory was built in Germany in 1805. Six years later the French raised a good many acres of sugar beets, and by 1825 the sugar industry had become established in France. At that time France produced a good deal more sugar than Germany. A few years later Germany led and has done so ever since.

In 1830 the sugar beet industry was introduced into the United States, but it did not become important here until 1879 when a factory was built. Since that time it has grown rapidly, and is an important industry in several of the states. Utah ranks among the first in the production of beet sugar in the United States.

The Utah sugar co. (known now as the Utah-Idaho Sugar Company) was the first to build a factory in Utah, and has done very much to promote the sugar industry.

Today there are a great many sugar factories in Utah and the sugar industry has done a great deal in developing the state; it has also done much for the farmer and laborer.

A very important factor in the sugar industry in Utah is the beet seed. Most of the seed has been imported from Europe where the climate is somewhat different from that in Utah.

The Utah Experiment Station has grown seed for many years and has found Utah climate almost ideal for the production of sugar beet seed. The germination power of the seed as well as the amount of sugar produced from it have been found to be superior in Utah seed.

HIGHER PRICES FOR IMPLEMENTS

Agricultural machinery, implements and tools are more necessary today than ever before. Farmers need them to help with the work on the farm. The hundreds of young men who have joined the army and navy can partly be replaced with modern machinery. A serious question however is to secure the kind of tool or implement when you want it, but another along with this goes the problem of increased costs.

In talking with one of our implement dealers he suggested a few reasons why prices are sure to go higher. The cost of raw material is the first to be considered. The quotations are at Pittsburgh. Pig iron: July 12, 1916, sold for \$21.95 a ton, July 12, 1917, sold for \$57.95 a ton. Steel iron bars: July 12, 1916, \$2.50 per cwt., July 12, 1917, sold at \$4.75 per cwt. Tank plate steel: July 12, 1916, was \$3.50

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per cwt., July 12, 1917, sold for \$9.00 per cwt. Many of the manufacturers can not get raw material even at these advanced prices it is a serious problem with them.

Then there is a car shortage and the movement of freight is often delayed after shipment is ready. There is a congestion of freight and with strikes—the conditions get even more serious.

The manufacturers will not guarantee date of shipment because he claims he can not get material under such conditions. If the dealers says he will cancel the order if he can not get immediate shipment the manufacturer is glad to cancel it.

Some dealers are predicting an advance of 20 to 25 per cent in the retail price. It would seem a wise thing for those who need and plan to buy any machinery of any kind to put their orders in advance. Do not wait until you are in need of tools before you buy them. Make a survey of your needs and order now what you

will want later on. You may be able to save money this way and you are very sure of saving time by having the extras or machine on hand when you need it.

Additional advances will be made and have been made by some dealers. The advance has been put off just as long as possible but it must come.

The explanation as given by one of the leading manufacturers is that all of the material bought at lower prices than are now obtained has been exhausted. So long as any of this material was on hand the cost of it made the average lower than the latest quotations. As this stock has been consumed, the basis of price necessarily has been advanced. It is now equal to the current quotations for material. That the new prices will be held firmly throughout the season, even though the war should end within a short time, is the opinion of the same manufacturer, expressed in a most emphatic manner.

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Seed and Emergency Production

A Clean Harvest--- The Conservation of Manure

Geo. Stewart Assistant Professor of Agronomy, Utah Agricultural College.
Dr. F. S. Harris, U. A. C.

With everybody interested in the food situation not only of the United States but of the entire world, most problems of emergency production will be given some attention. Great success can be expected only when the fundamental problems rather than the superficial ones demand the major effort. It is often easy for a person of ordinary insight to pick out the really important factors in big problems. It may, however, be quite another thing to get a unity of action on these factors. It is always easy to "grandstand" and there is no time more tempting than in periods of great national awakenings. Nothing could lend itself more readily to such exploitation than the present unparalleled demand for foodstuffs. There has been so much of this "limelight" that the glare has left us pureblind to the solid, undecorated fundamentals. Increased acreage, better culture, more liquid credit, more equitable distribution, and perhaps price control and food embargoes are of primary importance.

Preserve Ample Seed Stocks.

None the less essential—if possible even more basic—is the preservation of ample stocks for seeding purposes. Ordinarily this question does not deserve much consideration. There has always been enough seed on the farm or accessible to it to plant the entire crop. The chief urging was to increase the quality of the seed. Right now, however, we are facing a new danger, namely that of not having seed of any satisfactory sort in sufficient quantities to plant the crop of next season. The question of superior quality is more important than ever before, but not quite so vital as that of saving enough seed. The danger lies in the temptation to sell out of our seed stocks at the almost "bonaza" prices now offered. Ordinarily, seed can be bought if any one section is entirely out. This year every farmer is going to "clean out" pretty thoroughly, and high as food crops now are it is possible that seed may be costly out of proportion even to the abnormally high price for the general crop. Of course a general slump is possible, but not at all likely. Minor slumps due to unequal distribution and the retarded ocean transportation are almost sure to occur, but not permanently.

The Food Problem not Temporary.

The objection is being urged, that we are courting "glutted" markets by excessive planting. This pessimistic viewpoint has no well considered argument as its basis. This year the crop conditions of Argentina, India, and Europe are far below normal. Argentina is a heavy exporter, but the wheat and corn harvests of January and February (their harvest season) were so small as to permit practically no foreign shipments. Coupled with a poor season in Europe are the life-and-death struggle of France, the great munition activity of Britain, and the disorganization of Russia. Not only must the United States feed itself and its share of Europe, but it must somehow find enough to feed Argentine's share and then in addition make up for Europe's

own under production, which may be more serious than we would suspect. Not only has the season and general national interests lessened yields, but many — inconceivably many — if the best farmers have been drafted to the trenches or to other industries. Women, children, and old men can farm, but they cannot farm so efficiently as can prime men, and it is prime men who have been drafted off the farms of Europe. Thus it can be seen that the food situation is likely to get more acute instead of less so.

If Peace Should Come.

But what if the war should end



Good Roads are Important for the Upbuilding of any Community.

suddenly? Well—that is to be hoped for rather than expected but let us suppose the unsupposable. Suppose the war should end in a few days? It is too late to plant this season, and the demands of half-starved Germany would be added to those of the needy Allies. What about next year if the war ends this winter? Nearly the same. The countries are agriculturally disorganized, machinery seized or destroyed, horses killed, credit difficult, and much of the land so over-run and torn up with trenches or shell pits that it will not produce well for years. Meanwhile, population will increase rapidly. Consequently, the food situation promises to become a permanent problem.

Let us Remember That because a seed is the connecting link between two generations of crop plants, seed, and only seed, makes production possible. It is absolutely impossible to plant seed we have sold. Especially now is the danger of poor left-over seed imminent. Good seed has a somewhat higher food value than poor, but it has a many times greater value for planting. Here are a few of the common advantages:

1. It keeps better.
2. —It germinates sooner.
3. It grows faster.
4. It produces more healthy plants.
5. As a result it produces higher yields of better quality.

Save Enough Good Seed.

The great importance of saving an

(Continued on page 10)

Now that the nation is engaged in a war in which food supply will be one of the large factors in deciding the issue, it is necessary that every possible means of conservation be adopted. Careless methods, which might in part be justified in times of plenty, must now be changed, and everything must be done to save every pound of food for man and beast.

With the cultivation of vast areas and the use of large machines, old-time methods of carefully harvesting the crop have been neglected. It has been easier to increase the area of the farm than to give extra care to a few

acres. As a result such a thing as gleaning or making a clean harvest has almost unknown. When grain was cheap and supply abundant farmers might find justification for a certain degree of carelessness in harvesting the crop; but now that the price of all farm products is so high, and in view of the nations in need of all products, there seems to be no good reason why the greatest care should not be taken to make an absolutely clean harvest.

At a recent interstate Cereal Conference held in Kansas City, it was estimated that in the United States at least twenty million bushels of wheat, and proportionate quantities of other cereals are annually lost by waste in harvesting and threshing. This waste can and should be, in a large measure, easily avoided. A man and team are known to have cleared from \$27 to \$62 a day from cleaning up after threshers. In another instance \$500 was gained by a man with a team and fanning mill in three weeks' time, cleaning up after threshing machine settings.

This carelessness is not confined to the cereals but extends to all the crops. By going over the alfalfa field with a rake after the crop has been removed it is surprising how much can be had. On every farm there are ditch banks and corners where grass is allowed to go to waste. This could profitably be cut, or could be eaten by animals tethered where the feed could be reached.

Each farmer should adopt the slogan that he will harvest every ounce of crop that is produced on his farm and use it as economically as possible, not only to increase his own profits, but also to add to the war efficiency of the country.

THE CONSERVATION OF MANURE

Probably there is no conservation movement either as a war measure or during peace that is capable of yielding greater returns than the conservation of farm manure. The value of this material produced on the farms of Utah each year runs into the millions of dollars when based on the amount necessary to pay for the same elements purchased as commercial fertilizers. As an average of a six years test at the Utah Experiment Station, manure applied to corn at the rate of five tons to the acre each year, gave an increased yield of corn worth \$3.57 for each ton of manure applied. This leaves no doubt that it pays to manure Utah land.

Experiments have shown that when manure is handled in the ordinary careless manner at least half its value is lost. Think what this means when converted into corn, wheat, and other food crops.

The losses in manure occur in two ways: from leaching and from fermentation. The valuable part of the manure is soluble in water and is readily washed out by rain, leaving the coarse material which contains very little plant food.

Leaching can be prevented by covering the manure or piling it in such a way that the rains are not able to wash down through it.

The destructive fermentation is caused by bacteria and fungi which break down the valuable nitrogen compound and cause the manure to heat thereby rendering it almost valueless.

These destructive organisms grow best in a manure pile that is loose and rather dry. For this reason horse manure, which is usually loose and dry, heats more readily than other kinds.

A number of desirable kinds of organisms are also found in manure. These grow best where air is not too abundant and where there is plenty of moisture. This makes it clear that manure should be kept moist and compact. If the pile begins to heat it should have water thrown on it and be tramped.

The question of whether it will pay to build a cement manure pit must be decided by each farmer for his own conditions. Certainly such a pit is desirable, but the expense will place it beyond the reach of some farmers. If manure is put in piles higher around the edges than in the middle, and of such a shape that the rain does not leach out the plant food, practically all of the fertilizing material can be retained without a pit or shed.

Provision should be made for saving the liquid, as it is just as valuable pound for pound as the solid. If a pit is not available, it is necessary to

(Continued on page 11)

DAIRYING

NEW FACTS REGARDING BUTTERFAT FOR FOOD

By J. H. Frandsen, Professor of Dairy Husbandry, University of Nebraska.

There has been an idea prevalent among dietists and chemists, as well as people in general, that all fats, energy and heat when consumed by the animal or human body, and until very recently no chemical or dietetic experiments had shown any real important difference between butter fat and other fats. It had, of course, been proved that fast of low melting point were more digestible than those of a high melting point. Aside from this, there was thought to be but little difference in their food value. In the estimation of many "fat was fat" and yielded only energy and heat.

The oleomargarine people often took advantage of this fact to exploit a cheap product as a substitute for butter. Whether or not this "just as good or better product" is at all worthy of the place they claim for it has always been seriously questioned by dairy and creamery men. In this connection experiments carried on by F. B. Osborne, of the Connecticut Experiment Station, Dr. Mendel, of Yale, and E. V. McCollum, of the Wisconsin Experiment Station, are peculiarly interesting and prove beyond a doubt the real value of butter—viz., that butter fat not only yields energy and heat as do other fats, but that it contains something more vital than other fats—a principle which, like proteins, supplies the elements necessary for growth and life itself.

In experiments carried on with white rats, young rats were fed mixtures composed of chemically pure protein, starch, fat, sugar and various salts, and got along splendidly for the first three months, when they lost appetite, fell off in growth and finally starved. After numerous repetitions of this nature the investigators found

that when milk was added to the ration the little animals began to regain normal condition, to thrive and grow to maturity. Many changes were made in their diet to make it more palatable changes in salts used, the kinds and amounts of sugar, etc., but always the same result—growth ceased at the age of about four months. It was in an attempt to increase the palatability of the diet by substituting pure butter fat for the lard, which had been used as the fat in the ration, that the experimenters found these new facts, for the little animals immediately began to grow just as when milk was fed. It was evident that butter fat supplies something necessary for growth which lard could not supply. Other experiments were carried on to determine whether other fats from the animal or vegetable kingdom would produce the same effect as had butter fat. Experiments with tallow, olive oil, corn oil, cottonseed oil and peanut oil proved futile, while the fat of eggs and fat extracted from the cells of pig's kidney produced the same result as did butter fat. Thus it seems evident that the fats obtained from the living protoplasm of the animal have this property of inducing growth after growth has ceased. Thus far no plant fat has been found to possess this power.

Experiment with pigs and calves gave results similar to those obtained with the rats. If records of experiments on man were available, it is reasonable to suppose that results fully as striking would be obtained. In this connection the editor of Hoard's Dairyman recalls two instances in which two public institutions had, in the interest of so-called economy, substituted oleomargarine for butter in the diet of the inmates. It was noted that when oleo was used the inmates were not in as good physical condition and that physicians were in greater demand than before. When oleo was replaced by butter it was reported that the health of the inmates was materially improved.

In the light of these experiments and observations it is reasonable to suppose that even more marked discrepancies would be apparent in the growth and general health of young children.

Just how much or how little butter fat can be used and still maintain growth has not yet been determined—but enough has been proved to give the dairyman sure footing in his claim that butter fat is a better food than butter substitutes composed of vegetable fats and oils. Facts and figures like these make it most embarrassing for the oleo manufacturer to claim hereafter that he has a "just as good as butter" article, and surely it behooves the housewife to give the most careful consideration to the results of these recent investigations and the conclusions which may logically be drawn from them, before she decides to eliminate butter from the diet of her family.

WATCH THE FEED

Dairy authorities are constantly giving exhortations on the necessity of weighing and testing the milk of each cow, in order to discover the best producers. Most of our thoughtful dairymen who have any intention of staying by the game year after year, have fallen into line, and keep records which enable them to estimate fairly closely the milk and butterfat production of each cow. Unfortunately, many of our dairymen fail to realize that large production is not the whole story. Ordinarily, the large producer is the economical producer; but occasionally the large producer will eat so much more than the small producer that she will actually be less profitable. For instance, in a Wisconsin dairy

cow competition it was found that there were two cows, both of which produced just a little over 400 pounds of butterfat in a year. Knowing this fact alone, most cow buyers would be willing to pay about the same price for the two cows. But a feed record of these two cows was kept, and it was found that one of them ate twice as much feed as the other. With feeds at present prices, one of the cows produced a profit of about \$72 a year, while the other produced a profit of only \$2.

In keeping an account with a bank, a record is kept of how much money we deposit and how much we draw out. No thoughtful man would be satisfied with knowing simply how much he drew out. In like manner, when keeping an account with each of our individual dairy cows, we should know not only how much milk and butterfat we take from each cow, but how much feed we put into each one. This, of course, is too much trouble for the desultory dairyman who jumps in and out of the game. But the man who wishes to make a success of dairying, and who intends to stick by it year in and year out, should by all means keep a feed record of each individual cow, and figure up at the end of the year how much each cow has cost and how much she has produced.

One way to keep the feed record is to use the feed unit system. Under this system, it is reckoned that it takes 1 pound of corn meal, hominy feed, or dried brewers' grains to equal one feed unit while it takes only .8 of a pound of cottonseed meal, or .9 of a pound of oil meal to equal one feed unit. Of bran or oats, it takes about 1.1 pounds to equal a feed unit. Six pounds of silage, 2 pounds of alfalfa or clover hay, 2.5 pounds of mixed hay, 3 pounds of timothy or cane hay, and 4 pounds of corn stover or oat straw are figured to make a feed unit. The hay, of course, varies somewhat according to quality, first cutting alfalfa hay or dustyclover hay running about 3 pounds to the feed unit, while 4th cutting alfalfa hay might run only one-fifth pounds to the feed unit. Ordinary pasture is supposed to furnish about 8 feed units per cow daily—more than this in June, and considerably less in August. The important thing is to find the number of feed units given each cow during the year, and then determine the pounds of butterfat and milk produced for each 100 feed units.—Wallace Farmer.

AGE AT FIRST CALVING

The most desirable age at which to have heifers calve is a very important question. In a great many herds, it is certain that the method of raising heifers is not such as to permit full development of their inherited powers of production. It has been shown that the larger cows of any breed are capable of higher and more profitable production than those of small to medium size. The extra capacity is a favorable point, providing they are equal in other respects.

For the most part, the belief is very common that it is necessary to have cows calf early in order to stamp upon them dairy qualities rather than tendencies for beef production. Some practical men discovered in their own experience that this was not true, and recent experiments also bear upon it. The belief that roughages should be fed to develop digestive capacity is also common, but it has been found that heifers raised with much in the way of concentrates and with small amount of roughage were as capable of consuming dairy rations as heifers raised almost exclusively on roughages.

Aside from the question of cost, the age is of little consequence. The aim should be to develop big, strong cows—and the procedure may depend upon conditions. If concentrates are used liberally, the rapid development will

permit of earlier breeding. If the use of concentrates is limited, the first calving period should be somewhat postponed.

In general practice, the cows must pay the bills, and this is of primary consideration. Roughages, so far as possible, must therefore be made use of, and heifers must calve before the returns will commence to come in. Records of production from the Connecticut agricultural college herd of Holsteins show the value of heifers well developed at calving time.

The age of first calving varies from one year and eleven months to three years and six months. The heifers, when not on grass, are fed three to six pounds of grain daily, with hay and silage are kept in thrifty growing condition. They are divided into two groups, those calving at 30 months or less and those calving at later than 30 months. The average age of the early calvers is two years and one and two-fifths months, and of the late calvers, three years and one month.

The average production of the early calvers' first period was 7,691 pounds of milk and 273 pounds of fat in an average of 356 days. The late calvers produced 13,128 pounds of milk and 443 pounds of fat in 349 days. In the second milking period, the early calvers produced 9,684 pounds of milk and 342 pounds of fat in 365 days; the late calvers produced 14,682 pounds of milk and 473 pounds of fat in 365 days. In the third period, the early calvers produced 13,552 pounds of milk and 467 pounds of fat in 360 days; the late calvers (only one complete) produced 14,236 pounds of milk and 520 pounds of fat in 365 days.

In the early group, none have produced over 18,250 pounds of milk. In the late group, three have exceeded this, one with her first calf. Two of these heifers have made over 20,000 pounds of milk, one with second calf. At least two other late calvers have the capacity to produce over 20,000 pounds. It is not probable that any of the early calvers will do this unless one now milking in her first period, having calved at 30 months of age, may some time accomplish it. She will be given a long dry period, to permit of full development.

For various reasons, it is becoming more and more important for dairymen to get the most efficient production from their herds. In herds of doubtful dairy qualities, there is good reason to have cows calve early, to find as soon as possible if they are worth keeping. In a herd of dairy quality of medium to high order, more attention should be given to full development of the heifers in size and capacity for efficient and profitable production. Jerseys and Guernseys should usually not calve earlier than 26 to 28 months, and Ayrshire or Holsteins not earlier than 30 to 32 months.—Prof. G. C. White.

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ABORTION IN DAIRY CATTLE

P. W. Allen.

Abortions among dairy cows are due either to an accident or to a germ. The amount of loss due to the former cause is slight, while abortion due to the germ, that is, infectious abortion, within the last few years, has resulted in one of the most serious losses suffered by the dairymen. It is a great misfortune to the dairyman that while this trouble is prevalent and increasing in all parts of the country where cows are kept, as yet no effective treatment has been developed and the control of the disease is greatly hampered by lack of knowledge of just how the disease is most often spread.

The Disease

The disease is characterized by the dropping of the calf prematurely, due to an infectious catarrh of the womb caused by the abortion germ.

The Time of Abortion.

Abortion may take place any time from the third month to within a few days of completion of the term, most commonly during the fourth and fifth month of pregnancy. Sometimes the fetus is retained in the uterus and becomes mummified. That is, the dead fetus dries up in the membrane surrounding it, and may be carried for months beyond the normal period. Cows which have aborted once develop enough immunity to the disease to carry the calf longer the second year than the first and the third year they will greatly complete the term and give birth to healthy calves and show no ill effects of the disease. Still such cows are not as good as sound animals since they may still carry the germ and can infect other cattle.

Detection of Infected Animals.

Cows infected for the first time often carry the calf but three months

and the expelled fetus may easily be removed with the manure and bedding unnoticed. However, when the fetus is carried the greater part of the term a yellowish discharge usually occurs. Also, all the signs of calving will begin to develop prematurely. After the abortion, a yellowish discharge may continue for several weeks. Retention of the after birth usually accompanies an abortion where the fetus has been carried from seven to nearly nine months. It is considered that the very unhealthy condition which necessarily accompanies retention of the after-birth often results in sterility. In purchasing animals the best means of getting information as to their infection with the abortion germ is to have the blood of the cow tested. This method of detecting the disease has not become commonly used by dairymen, as no wide campaign for controlling the disease has been started.

Spread of the Disease.

It is quite generally accepted that the spread of the disease are by the bull, by the vaginal discharge, and by the milk. The occurrence of abortion in cows having been served by the same bull has repeated itself so often that the mode of transmission has been assumed. That the characteristic yellowish discharge from aborting cows will cause the disease has been definitely proven.

Control of Abortion.

Not enough is known about the spread of abortion at present to satisfactorily control it. There is no cure for the disease known. Many who wish to sell a remedy have taken advantage of the fact that a cow will develop immunity in from one to three years and thus cure herself, the remedy often getting credit for the cure, where this fact is not understood. The best recommendations for the control of the disease seem to be:

1. Isolate infected cows and bring up their calves on the milk of the cows known to be uninfected.
2. Disinfect the navel of the new born calf from an infected mother.
3. Burn or bury in lime the fetus and afterbirth and disinfect stable and all litter after an abortion.
4. Wash thoroughly the hind quarters of an aborting cow and irrigate the vaginal tract with a good antiseptic daily until all signs of discharge have passed.
5. Disinfect the bull before and after every service.
6. Add new animals to a sound herd as calves only.
7. Keep clean animals and clean stalls.

STARTING THE HEAD

OF THE HERD

E. L. Vincent.

Very much depends upon the start the bull calf gets. I have seen some calves so poorly kept for the first few months of their life that they never fully overcame the handicap. It seems too bad that this should ever be the case, and it need not be so.

Let us remember, then, that milk is the natural food of the calf. It should be good milk, too. I know it is expensive to take nice new milk, just warm from the cow, and feed it to the calf. But when we think what the calf is to be in making up the future success of the herd, does it seem as if any expense within reasonable bounds could be too great?

At least two quarts of whole milk ought to be fed the young bull as soon as it is fairly on its feet, twice a day. When it gets larger, this amount may well be increased. It must be, if we are to keep the calf growing as it ought. I have not found it wise to let the calf suck more than a day or two after it is born. It is not well for the cow, and after it is weaned we are sure to have a big job to teach the little fellow to drink from a bucket.

Between morning and night, when the calf gets so it will take water, it ought to have a drink now and then,

especially at noon. Not all of us place proper stress on this part of a young calf's bill-of-fare. I am quite sure that a great many calves actually suffer for lack of water. No matter how much milk is given, some water ought to be placed where the calf can get it two or three times a day. We need not be afraid that it will drink too much. I never had a calf hurt by drinking too much good, pure water.

A word of caution is in order just here. There is such a thing as overdoing the milk ration. I bought a thoroughbred heifer Holstein calf once that had been overfed and came near dying just before I got it. The owner was so anxious to make it grow fast that he fed more than the calf could digest. Its bowels went wrong and we had quite a time getting it righted up. Better a little a number of times a day than too much at any one feeding.

For a good many years it has been my practice to set a bit of grain in a box near the calf very early in its life. At first we used buckwheat shorts and found this a good ration. But wheat feed is better I now believe. That has the bone and muscle-making properties, as well as flesh producing material.

Another good thing is a wisp of bright well cured hay as soon as the calf will take it. Hay is a good tonic for the bowels. It very seldom happens that after the calf gets big enough to eat hay, and this is very early, we need fear bowel troubles.

To make the bull calf's bringing up as good as possible, we ought to insist that no one, boy or man, shall pester it in any way. More than one good calf has been spoiled by being teased when young. This may be commenced in play, but it is sure to end in trouble; it may be disaster.

In short, the life of a young calf ought to be made as comfortable and prosperous as possible. The bull calf of today will be the head of the herd tomorrow. It stands us in hand to make it the very best we can.

THE MAN AND THE COW

(Continued from page 1)

of the beef-producing animal is to lay on flesh, whereas that of the dairy cow is to produce milk.

A cow of perfect type is seldom if ever found; therefore, in judging the value of a cow a man must understand the relative importance of different features of the conformation. He must know that a finely shaped udder does not always make a good cow; that a pretty head or a skin of fine texture do not overcome the disadvantages of a weak constitution or lack of capacity to consume enough to produce a large flow of milk.

After we have found both the man and the cow it is necessary for them to work together.

Even under our present conditions of war and extreme prices dairying offers one of the most profitable work that a man can engage in.

MAKING THE MOST OF PAINT

By Maurice Floyd.

The majority of farmers believe that a good job of painting can be done only by an expert, consequently painting

that should be done is left undone because an experienced painter cannot be secured at the proper time, or because of the high prices real experts in this line charge—the cost of the paint usually being about one-third and the labor two-thirds of the finished work.

It is true that much of the painting done by inexperienced workmen proves to be unsatisfactory, but this is because the amateur failed to inform himself concerning a few necessary details and does not give the work the care which every piece of painting requires to make it a success.

As a matter of fact, notwithstanding popular opinion to the contrary, there is no mystery about the painting business. Any farmer who will take the trouble to master the fundamental requirements of good painting and will apply them with painstaking care can paint his own building with entire satisfaction.

The first thing which an experienced painter considers when sizing up a job is the kind of surface to be painted. If the building is new, all is well, but if the surface is old care must be taken to have it in proper condition before the work of painting is begun. Every bit of old paint, dirt, grease—in fact, everything which is apt to work loose and thus loosen the paint, or anything which will prevent a perfect union of the paint and wood must be removed. Then, too, the wood to be painted must be perfectly dry. Perhaps there is no more prolific cause of unsatisfactory jobs of painting than the ignoring of this simple precaution. Even experienced painters, rather than lose time, often apply paint to surfaces which though apparently dry they know contain moisture. Consequently when the hot sun draws the moisture toward the surface it cannot find an outlet except through the paint, and a badly "blistered" piece of painting results. Usually the paint is blamed for this and both painter and owner unite in declaring that "that was a sorry lot of paint," and that particular brand gets a black eye which it in no way deserves.

Having secured a perfectly clean, dry surface, the job is now ready for the priming. This should consist of linseed oil with enough paint in it to "check" the oil—that is, prevent it from sinking too deeply into the wood. Manufacturers differ as to the exact percentage of paint required in the priming coat, and as they know their paint their instructions should be followed on this point.

The priming and each subsequent coat must be thoroughly "brushed out" and "brushed in." It would be hard to over-estimate the importance of this. The reason for this is that paint must be well "brushed out" or a thick coat, which is most likely to peel off, will result. It must be "brushed in" to form a perfect union with the underlying coat of paint or wood.

This "brushing out" and "brushing in" calls for lots of hard work, but it is work well spent, for well put on paint will stick for years if the foundation has been properly attended to.

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Volume Thirteen Index

For the aid of our many subscribers who have kept a file of the past year's copy we are giving in this week's issue an index covering the past twelve months. Short items and editorials that did not have a heading have not been included in the index.

We suggest that all keep each copy of the coming year, and at the end of the volume we will give an index of it.

We have a limited number of each copy of the past volume and will be pleased to supply anyone, as long as they last, to those who desire to complete their volume and have same bound. If you desire we can have them bound for you.

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HOME

REDUCE FOOD COSTS

Let Cereals Replace More Expensive Materials—Use Cheapest and Most Plentiful Cereal.

The most practical means of reducing table expenses without decreasing the wholesomeness and adequacy of the diet lies in increased use of cereal foods, especially boiled grains, mushes, and breads made of corn meal and cereals other than wheat.

Cereals contain most of the important food elements which the body needs and yet are comparatively inexpensive. They are primarily a source of starch, needed by the body to yield energy. They furnish also considerable quantities of protein, one of the most important and usually one of the most expensive food elements, needed to build the body and keep it in repair. In addition, cereals furnish mineral matter, fats, fiber, and, especially if part of the bran is left in, little-known substances which regulate activities.

Cereals therefore may be used as the relatively inexpensive basis for meals. It then becomes necessary only to eat with them comparatively small quantities of higher-priced food to make up a proper balance among the needed elements.

When animal foods or other nitrogenous foods, fruits, and vegetables also are used in the diet, the various grains may be interchanged freely as availability, cost, or preference dictates. The starch of all the cereals is practically the same. Protein, fat, and mineral matter vary somewhat in the different kinds, but so slightly that the difference need not be considered in the ordinary mixed diet. In such a diet therefore corn or oat meal, for example, may be satisfactorily substituted for wheat when the latter is scarce, without detracting from the wholesomeness of the meals.

The most common form in which cereal food is consumed is bread. The food value of bread, however, comes from the cereal of which it is made, and it makes little difference whether we get out cereal ration in baked or boiled form. If cereals are to be made a more important feature of the diet, mushes and boiled grains, as well as baked doughs, should be eaten in greater quantity. Practically any of the cereals may be used in making

some type of bread. Wheat has been most used because its gluten makes possible the raising of the dough with yeast. Flours and meals of the other grains, however, may be made into baking-powder breads, and many of them can be substituted for part of the wheat flour in making yeast breads.

Breakfast foods should be chosen carefully if economy is desired, since the form in which the food is purchased largely determines the cost. Meals from which mushes may be made may be obtained for a few cents a pound, while specially prepared grains may cost up to 48 cents or even more per pound. Bulk breakfast cereals such as oatmeal commonly may be purchased at lower prices than the same kinds put up in cartons.

One way to lessen the cost of breakfast foods is to buy whole grains from a feed store and grind them coarsely in a coffee or other hand mill. The cracked grains when salted properly, boiled thoroughly, and served with butter or sugar and cream or milk, make wholesome and palatable foods. These home-ground grains, used alone or with flour, also may be used satisfactorily in bread making. Boiled grains, such as rice, barley, corn meal, or hominy, may be used in the same way, or any of these may be combined into dishes with cheese, eggs, or meat, which add both flavor and nitrogenous food elements.

The important place of cereals in the diet and ways in which they may be used to reduce living expenses are discussed in *Farmers' Bulletin 817, Cereal Foods*, recently published by the United States Department of Agriculture.

MACARONI DISHES

Maude Westcott.

Macaroni, spaghetti and vermicelli are the foundations for so many delectable dishes and lend themselves to so great a variety of preparations that the wise housewife will introduce them frequently into the menu. When combined with the protein element of beef or cheese, the acid of tomatoes, butter or beet fat, the nutritive properties of an entire meal are assembled in one dish and nothing else is required to preserve the balance of the elements necessary to nutrition. Here are some delicious recipes for this class of foodstuff:

Macaroni Pudding.

(The initial preparation of macaroni or spaghetti is always the same and requires a little care to prevent that "gluey" appearance of this product when served. Use plenty of water, get it to the boiling point, salt and introduce macaroni into the pot by degrees so as not to lower the temperature of water. Boil ten or fifteen minutes, when tender, drain, and while in the colander, pour a little cold water through it to separate the sticks. It is now ready to combine with other ingredients. Place a layer of macaroni and a layer of grated cheese in a buttered pudding dish, alternating macaroni and cheese until the dish is near full. Over the whole pour an unsweetened custard mixture (milk and eggs—beaten separately—and a quarter of a teaspoonful of salt). Bake until slightly brown and serve in the same dish.

Macaroni Mold.

Break macaroni (spaghetti or vermicelli) into short length. Cook it rather overdone; dress with butter and grated cheese, work into it 2 eggs. Butter a mold and when the macaroni is cool fill the mold with it, pressing it well down and leave a hollow in the center, into which place a quantity of minced meat (fish or poultry). Then fill up the mold with more macaroni, pressing all well down. Bake in a moderate oven, turn out and serve.

Bales at Highest Speed—Lowest Cost

UNBEATABLE records for baling greatest amount of hay in the shortest amount of time and at lowest expense for power and crew being made constantly with

The Admiral Motor Hay Press—The Hay Press With the Hustle

Has the hurry built right into it. Simple as A B C. Free from needless parts. Smooth running—easy on the engine that runs it. Engine absolutely perfect, thoroughly tested for all conditions of field work. Plunger operates on the power which comes through a long lever working against the sharp grip behind the plunger head. Result, each stroke is powerful, with no back kick. Many exclusive features. A big money maker for the man who uses one. J. N. Inman & Sons, (Haybalers), Independence, Mo., say: "Bales 50-55-lb. bales in 35 minutes from windrow, and 70-75-lb. bales in 50 minutes from stack. Have made big money." Hundreds have had the same experience. Admiral Hay Press Co., Box 55, Kansas City, Mo.



SOLD BY UTAH IMPLEMENT-VEHICLE CO., SALT LAKE.

Macaroni and Ham.

Cook macaroni or spaghetti in short lengths till slightly overdone, work into it a good white sauce. Fill a baking dish with alternate layers of this mixture and finely minced, boiled ham. Let the last layer be of macaroni; spread with bread crumbs and dots of butter. Brown in the oven.

Macaroni and Tomato Sauce.

Prepare the macaroni in the usual manner. Arrange it in a large dish and over the whole pour one of the following dressings:

Spiced Tomato Sauce—Put 2 tablespoonfuls of butter in a saucepan, in this brown 1 minced onion; add a pint of strained tomatoes, the pulp being pressed through the sieve, a teaspoonful of sugar, a quarter of a teaspoonful of salt, a dash of pepper, a quarter of a teaspoonful each of ground cinnamon and nutmeg, a few cloves and allspice. Cook until it thickens, adding warm water till of the proper consistency.

Cream Tomato Sauce—Make a thick white sauce of 2 tablespoonfuls of butter, 4 tablespoonfuls of flour and 1 cupful of milk; add a fourth of a teaspoonful of soda to a pint of strained tomatoes (this prevents curdling) and mix all together. Sugar, salt, pepper to taste. Heat and pour over macaroni, spaghetti or vermicelli.

Macaroni and Oysters.

Cook about 4 ounces of macaroni in the usual manner. Into a buttered baking dish put alternate layers of macaroni and oysters. Crumb the top layer (which should be of macaroni), dot with bits of butter and season with salt and pepper. Grate cheese thickly over the whole. Bake in a moderate oven twenty minutes.

Macaroni (Superior Style).

Boil 1 cupful of macaroni or spaghetti, broken in inch lengths, for twenty minutes. Drain and rinse with cold water and drain again thoroughly. Chop 1 green pepper and 1 onion fine and cook with 1 cupful solid tomatoes (canned or ripe pulp). 2 tablespoonfuls of butter, 1 teaspoonful salt, ½ teaspoonful of paprika, for fifteen minutes. Then add the macaroni and 3 hard-boiled egg whites chopped fine. Let stand over slow fire until very hot. Arrange in a flat dish and over the whole sprinkle Parmesan cheese mixed with the egg yolks which have been pressed through a sieve. Serve at once.

COTTAGE CHEESE

An Inexpensive Meat Substitute.

Cottage cheese is one of the important meat substitutes, say specialists of the U. S. Department of Agriculture. It contains a larger percentage of protein (the chief material for body building) than most meats and furnishes this material at a lower cost. In every pound of cottage cheese there is about one-fifth of a pound of protein, nearly all of which is digestible. Meats, on the other hand, usually contain less protein and besides have a certain waste, such as bone and other inedible material. A pound of cottage cheese daily would supply all the protein required by the ordinary adult engaged in a sedentary occupation.

The following table shows that cottage cheese, obtainable at from 12 to 17 cents per pound, is much cheaper than most meats in furnishing protein for the diet.

For supplying protein, one pound of cottage cheese equals:

- 1.27 pounds sirloin steak.
- 1.09 pounds round steak.
- 1.37 pounds chuck rib beef.
- 1.52 pounds fowl.
- 1.46 pounds fresh ham.
- 1.44 pounds smoked ham.
- 1.58 pounds loin pork chops.
- 1.31 pounds hind leg of lamb.
- 1.37 pounds breast of veal.

In addition to protein, energy for performing body work must be furnished by food. As a source of energy also cottage cheese is cheaper than most meats at present prices. The following table shows the comparison when energy is considered.

On the basis of energy supplied, one pound of cottage cheese equals:

- 81-3 ounces sirloin steak.
- 11¼ ounces round steak.
- 11¼ ounces chuck rib beef.
- 10¼ ounces fowl.
- 5½ ounces fresh ham.
- 5 ounces smoked ham.
- 6 ounces loin pork chops.
- 71-3 ounces hind leg of lamb.
- 12¼ ounces breast of veal.

STALE BREAD AND WHAT

TO DO WITH IT

Bread is one of the items most commonly wasted in many American households. This waste is probably due to the fact that many housekeepers do not think of bread as costing much and are careless about its use or do not know what to do with the odds and ends frequently found in the bread box.

Good, fresh bread has a spongy texture which in time disappears, leaving the bread dry and crumbly, the moisture gradually passing out through the crust. Bread a little too stale to be appetizing, but not yet hard, may be freshened by putting it into the oven for a few minutes. The heat seems to drive the moisture from the crust back into the center of the loaf, making the crust more crisp and the crumb a little more spongy. Some housekeepers moisten the surface of the bread and sometimes cover it before putting it into the oven, but others think that moistening injures the texture of the crust without improving the crumb.

Rolls or biscuits which have a greater surface in proportion to their size, dry out more rapidly than loaves of bread. It is good planning, therefore, not to provide more than will be used at a meal or at least a day after baking. For similar reasons, bread stays fresh longer in the loaf than after it is sliced. No more than will be needed should be cut for any one meal and one loaf should be used up before the next is cut into. When the bread needs freshening it is a good plan to cut the required slices and put them into the oven for a few minutes just before serving.

Toast.

Toast is another form in which partly stale bread can be made attractive. In many families it is served only for breakfast, luncheon, or supper, but the custom which many high grade restaurants have adopted of serving thin, crisp, hot toast with the more substantial meals, might well be followed at home. Such dishes as chopped meat with gravy, creamed chicken or fish, poached eggs, melted cheese, cooked asparagus, Swiss chard, baked tomatoes, etc., are served very commonly on toast. Cream or milk toast (that is, toast with a cream

Plenty of Fruit

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Table and Preserving Sugar**
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Because of its purity, sweetness and real food value. You're sure of success in preserving and jelly making if you use this home product.

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sauce or milk gravy, perhaps flavored with a very little chipped beef, salt fish, or other savory) may be used as the main dish at breakfast, luncheon, or supper. Slices of toast may also be dipped in water or milk and beaten egg, and lightly browned on a hot greased pan. The recipe for this dish, which is called by various names, is given in the appended recipes under the heading "Egg Toast." It may be used at breakfast, and has the advantage of making the eggs "go further" than if used in a separate dish, or it may be served with cinnamon and sugar, sirup, or any sweet sauce for dessert.

As a Breakfast Food.

Another good way of using stale bread or of treating bread so that it shall not become stale, is to put the pieces in the warming oven or on the back of the stove and leave them until they are crisp and a delicate brown throughout. This is often called twice-baked bread and is very popular with children and also with grown-ups who like its "crunchiness" and the flavor which comes with the slight browning. The rusks which used to be commonly served like breakfast cereals in some parts of the country were made by crushing such twice-baked bread with a rolling pin.

Crumbs Valuable in Cookery.

There is nothing new in the idea of using bread crumbs in cookery and most housekeepers are in the habit of having some on hand for use in scalloped dishes, stuffing for meat, puddings, etc. Few realize, however, how much more generally they might be utilized. Many commercial bakers use bread crumbs to some extent as a substitute for the flour in many sorts of cakes, cookies, puddings, etc. Crumbs may also be used instead of flour and starch for thickening soups and sauces.

Any bits of bread which can not be eaten on the table should be saved and crumbed for use in cooking. Some housekeepers keep two kinds on hand; one, stale crumbs made chiefly from the inside of the loaf and suitable for use in the place of flour, and dried crumbs made from any part of the bread browned a little in a very slow oven and crushed fine to be used in scalloped dishes, for the coating of croquettes or other fried foods, or wherever a crusty, fine crumb is needed. To prevent their growing musty, crumbs should be kept in dry, air-tight containers. Fruit jars are often convenient for the purpose.

How to Utilize Quick Breads.

Yeast-made bread is by no means the only bread that can be utilized in some of the ways suggested. The quick breads raised by baking powder, soda, and sour milk or other acid, etc., dry out more quickly than the yeast bread, probably because the water is not so thoroughly incorporated with the flour during the making. These breads can not be freshened simply by putting in the oven like yeast-raised bread. Quick biscuit, however, make delicious toast which is very convenient for serving under meats, eggs, etc. The crumbs made from them may also be used in other breads, cakes, and puddings, as may also corn bread and cake crumbs wherever their flavor is not objectionable. Boston brown bread toasted and served with a cream sauce is a delicious dish for supper or breakfast. Toasted rye bread is also good. Crackers, which are practically dried bread baked in different shapes, and which may lose their crispness if kept exposed when the air is moist, can be freshened or made crisp by putting into the oven. The crumbs made from them serve many of the purposes of dried bread crumbs. A number of recipes for using left-over bread follow:

STALE BREAD RECIPES.

Vegetable Soup Thickened with Bread Crumbs.

1 quart skim milk.
1 cup bread crumbs, or 2 large slices stale bread.
Salt.

Small amount spinach or outer leaves lettuce (not more than 4 ounces).

1 small slice onion.

Cut the vegetables into small pieces and cook with the bread crumbs in the milk in a double boiler. If a large quantity is being prepared, as in a school lunch room, for example, put the vegetables through a meat chopper. In this case slices of bread may be ground with the vegetables, in order to absorb the juice.

Pancakes.

1 cup crumbs, $2\frac{1}{4}$ cups skim milk, $\frac{1}{2}$ cup flour, 4 teaspoons baking powder, 1 teaspoon salt, 1 teaspoon sugar, 1 teaspoon melted fat, 1 egg.

Soak crumbs in milk for $\frac{3}{4}$ hour. Then add other ingredients and cook on a hot griddle like ordinary pancakes. If sour milk is used, substitute $\frac{1}{2}$ teaspoon baking soda for the 4 teaspoons baking powder.

Gingerbread.

1 cup molasses, $\frac{1}{2}$ cup boiling water, 1-3 cups fine bread crumbs, 2-3 cup flour, 1 teaspoon baking soda, $1\frac{1}{2}$ teaspoons ginger, $\frac{1}{2}$ teaspoon salt, 4 teaspoons melted lard, or other fat.

Add water to molasses and combine with the dry ingredients mixed together, then add fat, and beat. Bake for about 25 minutes in a hot oven.

Indian Pudding Made with Crumbs.

1 cup fine crumbs, 1 quart skim milk, 1-3 cup sugar, 2 tablespoons melted butter, or other fat, $\frac{1}{4}$ cup molasses, $\frac{1}{4}$ teaspoon ginger, $\frac{1}{4}$ teaspoon cloves, $\frac{1}{4}$ teaspoon cinnamon.

Soak the crumbs in milk; add the other ingredients; and bake $1\frac{1}{2}$ hours in a slow oven. This pudding may be made with any kind of bread crumbs, but it furnishes an especially good means of using up stale corn bread.

Egg Toast.

6 slices bread, 1 egg, 1 cup milk, skim milk or water, $\frac{1}{4}$ teaspoon salt.

Beat the egg, and add the liquid and salt. Let the bread soak in the mixture until slightly soft. Then fry to a light brown on a hot, well-greased pan or griddle. More eggs may be used if available.

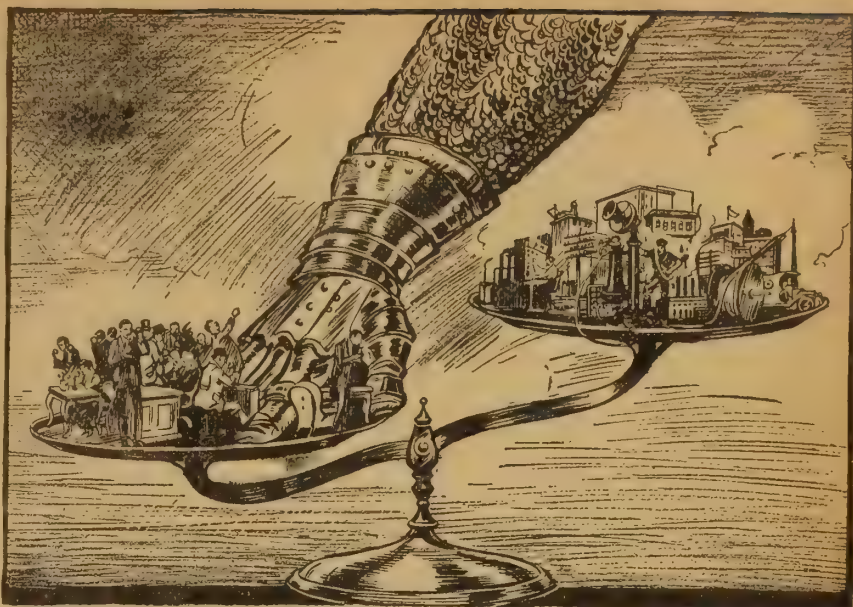
CAN CAREFULLY

Careful, painstaking canning is the only kind of canning that pays, declares the United States Department of Agriculture in a statement issued today warning housewives against carelessness in putting up fruits and vegetables.

"The faithful following of approved methods and directions is the only safe road to success in canning. Housewives who carelessly practice methods that are new to them, or who attempt to 'improve' on the methods, or to make short cuts, are taking a risk of spoiling good food. Canning is essentially a scientific process, however much it may have been simplified for home use.

"In the canning methods which the department advocates careful study has been made of the essentials for the preservation of food products, and all steps not absolutely necessary have been eliminated. There is good reason, therefore, for each step which is advocated. If home canners profess to follow a department method, they should follow it in detail; and if they fail so to follow it, they should frankly recognize that not the method but the application of it is at fault. Especially there should be no mixing of methods, whether those of the department or others. One method should be adopted and followed carefully in canning any given batch of products.

"In the one-period cold-pack method of canning in particular, canning has been simplified greatly as compared with some other methods. For this very reason, every step called for in the directions is essential, and not one should be omitted or performed otherwise than as indicated. Specialists who have worked out and demonstrated this method of canning for the last five years, have investigated all



The Weight of War

The heavy hand of war has disturbed the balance between supply and demand the world over. Our problem of serving the public has all at once assumed a new and weightier aspect.

Extraordinary demands on telephone service by the Government have been made and are being met. Equipment must be provided for the great training camps, the coast-defense stations must be linked together by means of communication, and the facilities perfected to put the Government in touch with the entire country at a moment's notice.

In planning for additions to the plant of the Bell System for 1917, one hundred and thirty millions of dollars were apportioned. This

is by far the largest program ever undertaken.

But the cost of raw materials has doubled in a year. Adequate supplies of copper, lead, wire, steel and other essentials of new equipment are becoming harder to get at any price, for the demands of war must be met.

Under the pressure of business incident to the war, the telephone-using public must co-operate in order that our new plans to meet the extraordinary growth in telephone stations and traffic may be made adequate.

The elimination of unnecessary telephone calls is a patriotic duty just as is the elimination of all waste at such a time. Your Government must have a "clear talk track."



AMERICAN TELEPHONE AND TELEGRAPH COMPANY
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One Policy

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Universal Service

reports of the spoilage of products, and have found in every case that the trouble was due to faulty equipment, including poor rubbers and containers, to failure to follow the directions carefully, to the use of old or spoiled vegetables or fruits, or to the local occurrence in certain vegetables of unusual spores which prove troublesome even under commercial canning practices. By following the simple directions exactly the specialists themselves have put up with homemade water-bath outfits, without loss, thousands of jars and can of various products.

"The following points especially should be kept in mind when canning by the one-period cold-pack method:

"Test jars, and use only those free from flaw.

"Use only good quality live rubber rings.

"Use only fresh, sound vegetables or fruits.

"Wash products thoroughly.

"Blanch in boiling water or live steam—hot water or vapor will not do.

"Dip in cold water—not tepid or warm water.

"Dip quickly into and out of cold water—do not soak.

"Pack into jars immediately—do not let the dipped products stand uncovered while you attend to something else.

"Be sure the jars are hot when the

product is put into them. They can be kept hot in vessels of boiling water.

"Place the top and rubber on each jar as it is filled—do not wait until all the jars are filled.

"Place the jars in boiling (not merely hot) water deep enough to cover them entirely (not merely part way up the side of the jars.)

"Sterilize for the full time indicated in the directions. Count time after boiling point has been reached.

"After sealing, turn jars upside down to cool, so that those with leaky seals may be found easily, and so that their contents may be resealed in tight-sealing containers.

"Store in a cool place—not in a hot kitchen or attic.

"Above all, plan so that you will not be interrupted. Then work quickly, and devote your whole attention to the work in hand. Let all other household work go, if possible, until all the jars are in the sterilizer. Any delay in performing the steps between blanching and sterilizing means risk of loss."

NOT LIKE DOBBIN.

Farmer Burr—How do you like your automobile, Ezra?

Farmer Root—Well, I can't go to sleep on my way home from town, and wake up in the barnyard, as I could with old Dobbin.—Puck.

Seed and Emergency Production

(Continued from page 3)

abundant stock of good seed, cannot be over-emphasized. The food commission, price control, and economy will do much, but there is no means of making seeds to order—we haven't solved the secret of manufacturing life, nor have the Germans.

To look well ahead and to plan for years is our only hope. We have had much patriotic campaigning and much newspaper farming. But there is only one way to increase our supply of food. That way is long and difficult; it is lonesome and laborious. It lacks the glamor of public hero worship. Only by plodding day after day, and year after year can any material success be expected.

Selection of Seed.

In all cases it must be remembered that the whole plant is the unit. One kernel of wheat is as good as any other kernel from the same plant, for each seed will tend to produce a plant like the one from which it came. Of course, if a stool of wheat or a stalk of corn has more room, better soil, or more favorable conditions in which to grow, it produces more than one not so favored. It is not fair to judge plants in different conditions against each other, because it is impossible to tell how much is due to greater food, moisture, or room and how much to superior qualities in the plant itself. Therefore, field selections ought to be made in such a way as to choose plants that produce exceptionally well in spite of the fact that they had no advantage whatever. This gives a starting point for a seed plat.

Seed Plats.

Every farm of considerable size should have one or more seed plats according to the size of the farm and the number of important crops that are planted each year. If even moderately large acreages of wheat, oats, barley, corn, or potatoes are being grown, the farmer can well afford an acre, more or less, to be cared for as a seed crop. There is little chance of losing, and much of gaining by this practice. It should provide better seed for the farm, and, even if the crop is marketed, it is likely to bring higher returns than any other acre of the same crop. Indeed many farms are devoted largely to the production of clean, high-yielding seed for sale at prices considerable above that of the ordinarily product. Of course, the plat or farm so handled will require a little extra care, but not so much as a person might expect.

To start field selection, let the grower go into a field that is going to yield heavily at harvest time. This field should be his own if it bears a heavy yield of good grain, but if his stand is not good it is unwise to choose from it. He can not be sure that seed from an ordinary yield is of high-producing power unless he has had it for several years and can account for the present poor or moderate yield in a rather definite manner.

Small-grains.

After choosing a field of small-grain that has a really good stand, the farmer should, just before it is ripe, walk carefully through it to find the part where the stand is fullest and most uniform. Then let him examine the individual plants—the stools, not the separate stalks. The best plant is the one that bears the most grain. Such a plant will usually have a relatively large number of stalks and moderately large heads that are near enough the same height to permit uniform binding or heading. The large heads are likely to be in the small stools, but if the kind of plant just described has large heads, so much the better. As large a number of these superior plants as convenient should be chosen and pulled up in such a way as to preserve the plant entire and uninjured. Of course no stool that has extra room, moisture, manure, or advantage in any way whatever should be selected. The selection should be made in such a way as to make sure that the extra yield is due to inherent qualities in the plant rather than to some favoring condition. Any badly bent or rust-infested plants should be discarded, because they are weak in these respects.

After a seedbed has been thoroughly prepared the grain should be disinfected by immersing it for ten minutes in a solution of formalin one pint to forty gallons of water. When dry, it may be shown with a grain drill that is free from weed seed and smut spores. If smutty grain has been seeded lately, it is advisable to rinse the drill with some of the formalin solution.



Extra Milk Pays the Bill

Every cent you put into Sun-ripe Stock Feed comes back to you in the increased milk production. And in addition, a little more profit.



is a scientifically balanced ration. It is composed of oats, barley, cotton seed meal and sugar beet molasses. Order a supply, use it and prove its economy.

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It warms the blood
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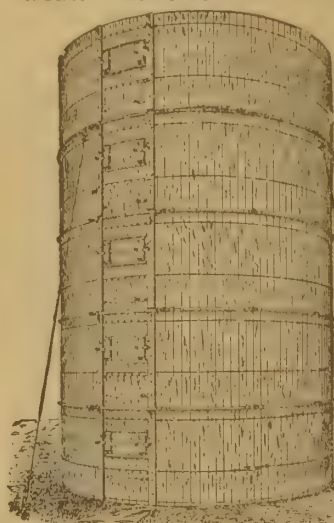
General Offices: 139 N. Clark St., Chicago, Ill.,
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Merchants Bank, Salt Lake City, Utah,

References: Dunn & Bradstreet Co., Produce Re-
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The Tulsa Silo is one of the most durable on the market. It is easy to erect, and will withstand all kinds of rough wear. It is re-inforced with steel bands.



Here is a silo that won't fall down when it is empty. It will give unlimited efficient service, not merely stand up for one year.

The Tulsa Silo

is low priced—strong, easily portable and economical in both upkeep and erection. Come to our yards in Murray and see the Tulsa. We can make immediate deliveries at the following prices.

10-20—30 Ton Capacity.....	\$140.00
12-20—50 Ton Capacity.....	150.00
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Investigate our easy payment plan. It enables you to put a Tulsa Silo on your farm TODAY!

Miller-Cahoon Co.

Murray

Idaho Falls

As the grain grows, it should be treated as other fields of the same kind of grain and, in addition, must be kept free from weeds. When it is well headed out, the farmer can profitably walk through, pull out, and burn any plants that show smut in the (Continued on page 15)

EAR PERFECT TAGS
Samples Free
ATTACHED INSTANTANEOUSLY
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LEG BANDS for Poultry, Pigeons, Turkeys
SALT LAKE STAMP CO. Salt Lake, Utah.

Drainage of Irrigated Farms

R. A. Hart, Senior Drainage Engineer.

(This is the second of series of articles on drainage of irrigated farms by Mr. Hart that will appear in the Utah Farmer).

Practical Drainage Requirements.

To determine the various factors of design it is necessary to make a careful study of subsurface conditions, often to a depth of many feet. Subsurface studies may be made by means of test pits and borings. On account of the high cost of test pits, only a few will be dug ordinarily, but it is customary to make a large num-



A RELIABLE ball in your twine can means money in your pocket. The other kind means wasted twine and serious delay.

Every man knows this. The thing is to find the reliable kind.

Plymouth Twine

has satisfied thousands and will satisfy you. *It does not tangle or fall down, and it's even in size.*

Plymouth runs full length and ties more bundles than other brands. Buy it this year and *order early.*

We sell it.

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Precaution

Your Ford, year from now, will be giving good service if you select a correct lubricant, especially refined for it, and use care when driving.

SIMPLEX FORD MOTOR OIL

was perfected by our experts to lubricate Ford cars in this climate, under all conditions. Makes good at all temperatures.

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ber of borings. Test pits may be dug with shovels, and picks if necessary; but usually it is feasible to use telephone shovels and spods and make a hole only a foot or so in diameter. A test pit affords a much better idea of the subsoil than a boring and is especially useful in giving an idea of the drainage capacity of the soil. For determining depth to the water table, fluctuations of the latter depth to and the thickness of various substrata, a boring is nearly as satisfactory. It is even possible in this way to obtain a fair idea of the character of the various strata. Borings may be made with an auger consisting of a carpenter's bit welded to a half-inch gas pipe, provided with a handle consisting of a T and two short pieces of gas pipe. The gas pipe stem should be cut in 4-foot lengths so that it may be extended as the depth of boring increases. The screw tip and the sharp wings should be removed from the bit. Care must be used to secure the type of bit shown, as an ordinary twist bit is not satisfactory.

In making soil borings only a turn or two should be given at a time, the soil being removed and examined by augers. The character of the soil may be determined by the way the auger cuts, the difficulty in pulling it out, the way the soil holds together when being removed from the auger, and by rubbing the soil between the fingers or gritting it between the teeth.

If it is desired to observe the behavior of the ground-water table over a more or less extended period it will be necessary to install observation wells. These may be bored with an earth auger or a post-hole auger, and ordinarily must be lined to prevent filling. The most suitable casing is made of ordinary galvanized downspouting perforated at frequent intervals on several sides with a nail. The casing should extend a half foot or more above the ground level and should be covered with a tin can. A round block of wood should be fitted into the lower end to prevent mud from rising in the casing.

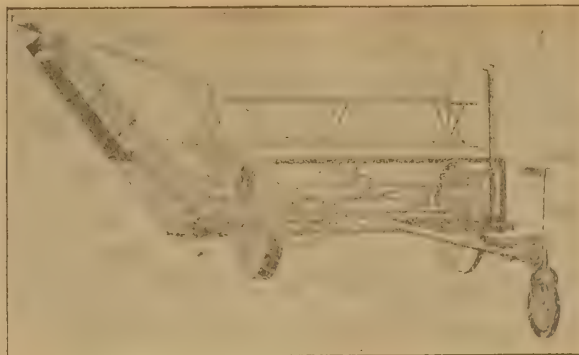
A number of such wells should be installed on most irrigated farms so that the owners may have immediate notice of coming injury and be prepared to combat it before crops are lost and before soil conditions become bad, making construction costs much higher than they should be. Men have declared frequently that the ground water on their farms was not within 20 feet of the surface when, as a matter of fact, it was within 2 or 3 feet.

Every irrigated farm should be supplied with a soil auger such as that described above and it should be used intelligently in connection with irrigation practice. Many farmers in the irrigated section consider a soil auger of as great importance as any tool or implement they possess.

The making of subsurface studies for the actual design of a drainage system, however, ordinarily should be left to some one trained in drainage work, as there are few projects so small or apparently so simple as not to warrant the employment of such a person. Surveys must be made in order to design an economical and efficient system, and it is preferable that the subsurface studies be made at the same time so that the surface and subsurface data may be correlated properly.

IT PAYS TO ADVERTISE.

A breeder of pure-bred poultry was asked if it paid to advertise, and his reply was very emphatically in the affirmative. More than that, he said that farm papers were better advertising mediums, except for big-priced stock and eggs, than poultry papers.



**A MAX-
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VEST**

is yours if you use the Milwaukee Binder

The latest product of the International Harvester Co., it is especially adapted to the conditions of mountain farming such as uneven ground and irrigating ditches traversing fields.

We also strongly recommend the **CHAMPION HEADER**. It makes a clean cut of the grain at a minimum loss and its durability is unexcelled.

For binding use Sisal twine. Its tough fibers bind to stay bound. We can deliver promptly.

Miller-Cahoon Co.

Murray, Utah.

Idaho Falls, Idaho.

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THE SALT LAKE ROUTE

Zion Canyon



"Wylie Way"

From Lund Station—

Thence 102 Miles in Luxurious Autos to

Wylie Camp

A vacation spent in Zion Canyon will be a pleasure long remembered.

For detailed information as to rates and reservations, write or call on:

**WM. WARNER, A. G. P. A., Salt Lake Route,
10 East Third South, Salt Lake City.**

We do not have to look far to find a reason for this, as the farmer, or more correctly speaking, his wife, is weeding out the scrubs and raising good poultry.

If more poultrymen would advertise in the farm papers and then take time to contribute articles on the care of breeding stock they would find that advertising pays, and pays well, too.

The breeder referred to states that the first eggs he ever bought for hatching were procured from a poultry grower who spends liberally for print-

er's ink and whose articles had been read with interest and profit.

**A CLEAN HARVEST—
THE CONSERVATION OF MANURE**
(Continued from page 3)

use considerable bedding or absorbing material. The best way to handle manure is to haul it out and spread it over the land the day it is made. If this is not practical it should be stored in a compact and moist pile in such a way that leaching cannot take place.

LIVE STOCK

THE BROOD SOW AND HER LITTER Wm. Hislop.

Those who have been long engaged in the breeding of swine know that the new-born pig is the main stay of hog production. The much needed expansion of the industry depends largely upon the number and quality of the pigs that are raised. Many pigs are lost and many more are developed below their capacity because of careless treatment during their first weeks of life.

Happily, the late-summer and fall-farrowing sows are usually in better health and more vigorous than those that gave birth to spring litters, consequently little trouble is to be feared. The run of lush alfalfa, clover and blue grass pastures and the exercise obtained by foraging contribute most liberally to an easy parturition and a robust litter. The greatest danger lies in the possibility that the sow may smash her pigs. This misfortune is not entirely preventable, but the following conditions will reduce it to a minimum:

1. Have the sow in good physical condition at parturition.
2. Give the sow a small feed of shorts and skim milk slop for two days before parturition.
3. In the farrowing pen, place a 2 inches x 4 inches scantling 8 inches from the floor and 6 inches or 8 inches from the wall to prevent the sow from lying too close to the wall.
4. Provide the sow with a small amount of clean bedding.
5. Be on hand during the act of "pigging" to lend assistance in case of abnormal presentations.
6. Remove the mucus from each pig's nose as soon as it is born so as to allow breathing.
7. If the sow is feverish, restless, and consequently irritable, place the new-born pigs in a basket warmed by a hotwater bottle until the sow has all finished farrowing, when the youngsters can be placed to the teats without having been injured.
8. Remove the after-birth and soiled bedding from the pen and bury it.
9. Do not disturb the sow by offering her feed for twelve hours after farrowing, but provide water to quench her thirst.

When twelve hours have elapsed give the sow a thin slop of shorts and skim milk. A 250 to 300 pound sow should receive two pounds of shorts mixed with one half gallon of milk for the first meal. Then as each day passes, add two pounds of shorts and two pounds of milk for each pound of shorts until the sow is receiving from ten to twelve pounds of shorts plus the milk in the proper proportion. Then begin to reduce the shorts at the rate of one pound daily replacing it with ground barley or corn meal until the ration consists of one half shorts and one half barley or corn plus the milk. Therefore, in fourteen to sixteen days the sow will be on full feed.

As soon as the pigs are able to move about, all should be placed on pasture, for it is indispensable to economical growth. If scours appear among the pigs, reduce the sow's feed, give her a dose of epsom salts and each pig a teaspoonful of castor oil. If thumps develop, the remedy consists in reducing the sow's feed and compelling the pigs to take plenty of exercise. The pigs should be induced to eat as quickly as possible. This can be done by feeding the sow in a low, flat trough into which the pigs will soon learn to go. This accomplished, provide a separate trough enclosed within a creep so as to exclude the sow and give the pigs a feed of shorts and ground oats mixed with skim milk. Keep all the troughs clean and so prevent the pigs from swallowing filth and germs which cause digestive disorders.

The care during "pig-hood" determines the kind of hog that will be produced in the end. The milk-fat must never be lost, nor the pig's capacity to consume and assimilate food, weakened. Always use judgment in feeding and thereby prevent the pigs from acquiring the habit of getting "off feed." Plan to feed so as to grow strong bone and muscle and to that end use an abundance of bone and muscle producing feeds. Insist upon plenty of exercise, but provide shade. Remember that a badly raised pig never goes into the pork barrel showing a profit, whereas a well raised pig will amply repay for the time, feed and labor invested.

RAISING HOGS

The department of agriculture is sending out a circular calling attention to the imperative need for more hogs. It says: "At the present time a large part of our pork comes from the few states in the corn belt, where it is the common belief that hog raisers possess advantages that farmers in other sections lack. This, however, is not altogether true.

"In the extreme west the alfalfa of the irrigated valleys and the clover of the coast districts furnish a good foundation for successful pork production. In most of these regions there is an abundance of small grain, particularly barley, that may often be fed economically, and corn is successful in some localities.

"Hitherto, where corn has been cheap and abundant, it has been used so extensively for feeding to hogs that there is a widespread notion that it is the best feed. Investigations, however have shown that it has its disadvantages as well as its advantages. When it is the exclusive grain feed, breeding stock are not as prolific as on a varied ration, and for fattening purposes an exclusive corn diet is not generally profitable. The hog is naturally a heavy and promiscuous eater. He thrives best where pastures are plentiful and grain crops, nuts or roots are most abundant. He must have water at all times and shelter in winter. If these conditions are met hog raising can be made profitable outside of the corn belt as well as in it."

WHAT LIVESTOCK PREPAREDNESS MEANS

Livestock Preparedness Means.

Not a hit and miss organization, but a well planned livestock farm.

Not more animals poorly cared for, but all the animals we can adequately feed and house.

Not all our fields in wheat or potatoes, but a large portion of the poorer fields in silage corn, or other fodders.

Not yielding to the tempting high prices of the present market, but the holding of our female stock for production next fall or spring.

Not a large growth of green feed in pastures and along our ditch banks covered by snow next winter, but the maintenance of a few sheep on every farm to use this otherwise wasted feed.

Not the abuse of our horses in the rush of the busy season, but time taken to care for their feet, shoulders, and teeth.

Not the sacrifice of business relations for immediate profits, but the cultivating of a strong mutual trust with our bankers and neighbors.

Not gambling on hay alone for wintering over our stock next season, but preparing against the long, cold season by building silos now and filling them next fall.

Not taking advantage of loyal labor, but showing our appreciation to those who work with us, by kind consideration and just rewards.

Not necessarily the adoption of new methods, but the strict opera-

tion of tried and proven methods of herd management.

Not indifferent co-operation with our county agents and livestock associations, but an active part in every move for better methods and community welfare.—T. E. Lepier, Colorado A. C.

SIMPLE RULES FOR PIG RAISERS

The following suggestions should be kept in mind by all pig raisers, according to the Department of Animal Husbandry, Utah Agricultural College.

1. Feeding and care are as important as breeding in producing a good hog. Plenty of good feed and care may make a fairly good hog out of a runt, but lack of it will always make a runt out of a good pig.
2. Young pigs must have a dry bed and plenty of sunshine.
3. Begin feeding the pig as soon as he will eat, and keep him growing until he is mature.
4. Always keep plenty of clean, fresh water where the hogs may drink at any time.
5. The more milk a sow will give the faster her pigs will grow.
6. Lice prevent a hog from doing well.
7. Be constantly on the lookout for hog cholera and be prepared to combat any outbreaks in the early stages of the disease.

THE TALE OF A GROWING PIG

Chas. I. Bray.

If you want to burn the road,
Buy a pig.
If you want to raise the load,
Buy a pig.
O' he's little, but he's wise,
He's a terror for his size,
And he's quick to advertise—
Buy a pig.
If you want the cheapest board,
Buy a pig.
If you want to own a Ford,
Buy a pig.
He is solemn but he's fat,
And he knows just where he's at,
And he always comes to bat—
Own a pig.
O, it's really somewhat hard—
Keep a pig.
That he has to end—in lard—
Keep a pig.
He makes sausage, ham and sich.
Pickled feet and bacon fitch,
And he makes his owner rich.
Keep a pig.

QUESTIONS AND ANSWERS

Gunnison, Utah.

Utah Farmer:

I am an inexperienced farmer but mean to make a success of it.

1. When is the best time to sow Rye on new land to be irrigated and how much to sow to the acre?

2. When is the time to plant strawberries?

3. Is there any way to get rid of Pocket Gophers?

The Utah Farmer is a welcome visitor, the best farm paper we get.

1. Answered by F. S. Harris.

Rye may be planted either in fall or spring as there are varieties for each. About five or six pecks to the acre of seed are used.

2. Answered by T. A. Abell.

If there is an abundant supply of water available, strawberries may be planted in the early fall. However, early spring planting is more desirable as the weather is more favorable, there is more moisture and the plants have an opportunity to make a good growth before winter.

3. Answered by A. O. Larson.

Pocket Gophers may be successfully poisoned by putting some of the following into their holes and leaving the holes uncovered: pieces of apple, potatoes, sweet potatoes, raisins or prunes, poisoned by inserting a few crystals of strychnine into slits made with the point of a knife.

Another way to poison gophers is to dissolve ½ oz. strychnia-sulphate in one quart boiling water to which has been added ¼ ounce borax. To this add ¼ bu. of wheat. When the grain has taken up all the water, roll it in a mixture of flour and sugar using 1 lb. sugar to 5 lbs. of flour. Place a few kernels in the holes of the gophers.

STUNG

"Pretty nice land around here," said the stranger, as his dusty rig stopped in front of the gate.

"Certainly is," replied the eager farmer. "Finest in the state."

"I reckon it is too high priced for a poor man," sighed the stranger.

"Well," replied the farmer, "it is worth every cent of \$200 an acre. That's the way I value it. Were you thinking of buying?"

"No," replied the stranger as he dotted something down into a book. "I'm the new county assessor."—Household Journal.

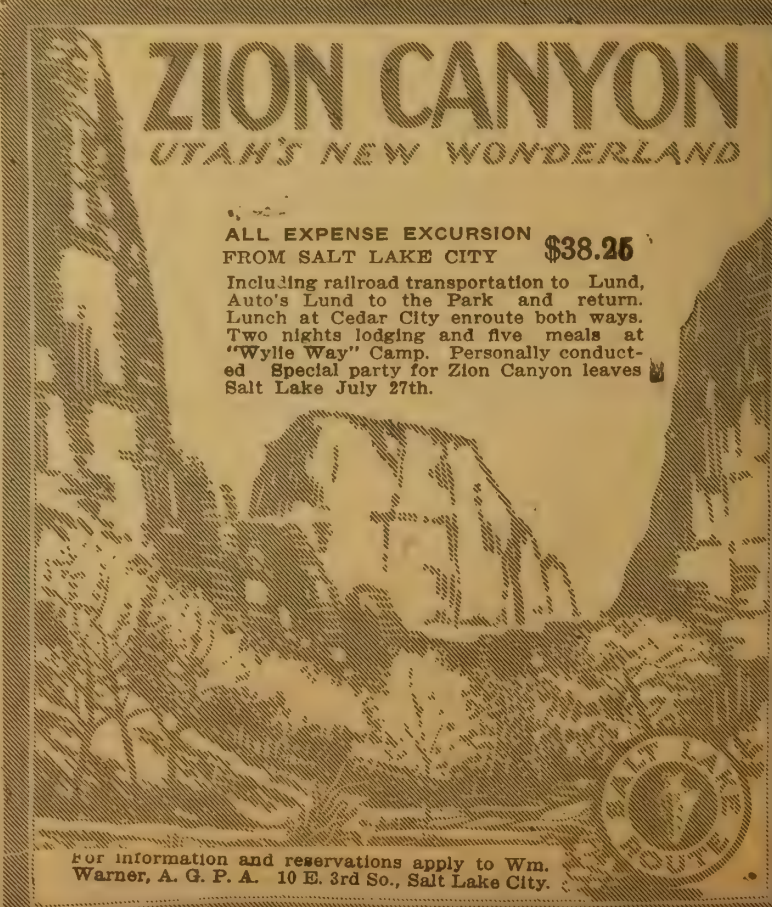
ZION CANYON

UTAH'S NEW WONDERLAND

ALL EXPENSE EXCURSION
FROM SALT LAKE CITY **\$38.25**

Including railroad transportation to Lund, Auto's Lund to the Park and return. Lunch at Cedar City enroute both ways. Two nights lodging and five meals at "Wylie Way" Camp. Personally conducted Special party for Zion Canyon leaves Salt Lake July 27th.

For information and reservations apply to Wm. Warner, A. G. F. A. 10 E. 3rd So., Salt Lake City.



The Storage of Potatoes

From the present outlook we will have a very large crop of potatoes in Utah and Southern Idaho. The marketing of them is going to be a problem. So many ready for shipment at the same time makes the task all the more difficult. Storage will help and we give here a few suggestions as sent out by the Department of Agriculture for the use of pits, dugouts and masonry storage houses for holding the main crop of potatoes.

While the dugout storage house is in most general use, concrete or masonry houses with frame superstructures are, perhaps, most satisfactory in cold climates. In some sections, especially in the South where drainage is poor, insulated frame structures built entirely above ground must be depended upon.

Purposes of Storage.

The primary purposes of storage, are to protect the tubers from extremes of heat and cold and from light. Account also must be taken of conditions of humidity and ventilation and of the size of the storage pile.

The temperature should be the highest at which potatoes can be maintained firm and ungerminated, and which will at the same time hold fungous diseases in check. Experiments with artificially refrigerated storage indicate that 36 degrees F. is sufficiently low for all practical purposes and that in the earlier portion of the storage season a temperature of 40 degrees F. is just as satisfactory as a lower one except where powdery dry rot infection occurs.

All natural light should be excluded from potato storage houses because when the tubers are exposed to even modified light, they are soon injured for food purposes. A practical rule in regard to humidity, is to maintain sufficient moisture in the air to prevent the wilting of the tubers and at the same time to keep the humidity content low enough to prevent the deposit of moisture on the surface of the tubers.

If the potatoes are piled in too large piles they may become over-heated and deteriorate. Six feet is a good maximum depth to which to pile tubers in bins, and the area covered by each pile also should be limited. A good plan is to insert ventilated division walls at intervals through the pile or bin. These may be made by nailing relatively narrow boards on both sides of 2 x 4 uprights, 1 inch spaces being left between the boards. General ventilation for the whole storage house usually is accomplished through ventilating shafts in the roof.

Methods of Storage.

The possible ways to store potatoes, are pits or earth covered piles, in dugout pits or potato storage cellars, in insulated wooden structures, in substantial masonry or concrete houses, and in artificially refrigerated storage houses. The latter two methods are the most expensive. Pitting is the most primitive method of storage, but if properly done on well-drained locations is satisfactory in so far as the preservation of the potatoes is concerned. The chief drawback to pitting is that the potatoes are not always easily accessible in the winter.

Potato Storage Cellars.

The dugout pit or potato storage cellar is probably more widely used than any other type of storage space. In the arid and semi-arid sections a type with sod or dirt roof is in most general use. As a rule, the excavation for the cheaper structures of the dugout pit or cellar type when erected on level or nearly level land does not exceed 3 feet. The soil removed from such an excavation, particularly if the dugout is of any considerable size, is ample for banking the side and end walls and also for the roof. The cost of construction may be greatly modified, according to the character of the location.

In the cheaper dugouts, where the soil is of such a nature as to remain in tact it is allowed to form the side

and end walls, the roof being supported on plates resting on the soil and held together by boards or joists. This form of construction involves a deeper excavation and a constant element of risk from a cave-in. In the more expensive and substantial structures the side and end walls are built of concrete.

Insulated Frame Structures.

Insulated frame potato storage houses are not used very extensively. As a rule they are better adapted to southern than to northern climatic conditions. The construction feature of such houses is the thorough insulation of their walls, ceiling, doors and windows. This type of storage house is not to be recommended for northern locations, nor is it advocated for the South except where poor drainage conditions will not permit the use of the dugout or cellar style of house. It is not recommended, because it can not be so economically constructed, nor does it furnish as good a type of storage as the properly ventilated cellar storage house.

STANDARD FOR WHEAT.

Wheat growers will be interested in knowing the new standards for wheat recently established by the Secretary of Agriculture. All shipments for interstate will be affected by these standards. Congress gave to the Secretary of Agriculture power to make and enforce them. The standards for winter wheat was effective July 1st and for spring wheat it will be August 1st.

If all shipments of interstate are to be governed by these standards no doubt the different states will adopt similar or the same. This is a very important step in the sale and marketing of wheat.

Six classes of wheat are recognized and carefully defined. In the first five classes there are sub-classes ranging in number from two to four. In each sub-class there are five grades, each one determined by minimum test weight per bushel and maximum limits of moisture, percentage content of wheat of other classes, percentage content of damaged kernels and percentage content of inseparable foreign material. The six classes are defined below. The sub-classes are mentioned by name only. It is believed that every grower and shipper of wheat will find it to his advantage to familiarize himself with the details of the established standards.

Class 1. Hard Red Spring Wheat. "This class shall include all varieties of hard red spring wheat, but shall not include more than ten percentum of other wheat or wheats."

The sub-classes are (a) Dark Northern Spring, (b) Northern Spring, (c) Red Spring, (d) Red Spring Humpback.

Class 2. Common and Red Durum Wheat. "This class shall include all varieties of Durum wheat, but shall not include more than ten percentum of other wheat or wheats."

The sub-classes are (a) Amber Durum, (b) Durum, (c) Red Durum.

Class 3. Hard Red Winter Wheat. "This class shall include all varieties of hard red winter wheat, but shall not include more than ten percentum of other wheat or wheats."

The sub-classes are (a) Dark Hard Winter, (b) Hard Winter, (c) Yellow Hard Winter.

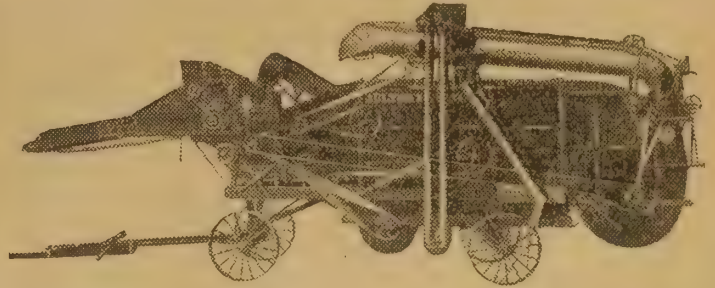
Class 4. Soft Red Winter Wheat. "This class shall include all varieties of soft red winter wheat, also Red Club and Red Hybrid wheats of the Pacific Northwest, but shall not include more than ten percentum of other wheat or wheats."

The sub-classes are (a) Red Winter, (b) Red Walla, (c) Soft Red.

Class 5. Common White Wheat. "This class shall include all varieties, except Sonora, of common white wheat, whether winter or spring grown, but shall not include more than ten percentum of other wheat or wheats."

AULTMAN-TAYLOR

Conserve The Nation's Grain Crop



That's the cry heard on every side. That's what is demanded of every American farmer. There's a shortage of grain the world over. America's 1917 crop is supposed to make up this shortage. You, as a loyal American will want to do your "bit" and the best way for you to show your loyalty is to thresh and save your grain—all of it with a

NEW CENTURY THRESHER

There is no question about the New Century being the best grain thresher built today. It's the only separator having the Universal Rotary Rack. This rack kicks or agitates the straw twice with each complete revolution of the crank shaft, or in other words, it gives double the separation of the ordinary vibrating rack used in other machines. This rack, working in conjunction with numerous other superior grain cleaning and grain saving features make the New Century a machine of rare quality. The New Century can be depended upon to save the grain better than any other machine your money can buy.

New Century machines are built in seven sizes—there's a size to suit your power. Write for Catalog or drop in at our Salt Lake Branch and see the machine in operation.

THE AULTMAN & TAYLOR MACHINERY CO.,

DEPT 10, MANSFIELD, OHIO.

Branch House, 525 West First South Street

SALT LAKE CITY

CHARLES H. DOBSON, Manager.



The sub-classes are (a) Hard White, to which are assigned varieties known as White or Palouse Bluestem, Early Baart, Allen or Red Allen, Galgalos, Martin Amber, and varieties possessing similar characteristics, (b) Soft White.

Class 6. White Club Wheat. "This class shall include all varieties and hybrids of White Club Wheat, and the common white wheat known as Sonora, but shall not include more than ten percentum of other wheat or wheats."

If you are interested in this subject send for a bulletin, address the Bureau of Markets, Washington D. C.

HOW TO KEEP YOUR CAR

FROM BEING STOLEN

"Many little things can be done to an automobile," says a writer in Farm and Fireside, "to prevent a thief from running away with it, yet owners take surprisingly few precautions to prevent theft or joy-riding."

"Always disconnect the ignition system or lock the gear lever. It is a good plan never to leave the car in an alley or inconspicuous side street. A record should be made of the factory number, and any little peculiarities of the car, as well as the style and make of the different tires. More cars are stolen at night in large crowds and while the owner is at the theatre than at any other time."

"If you can arrange to short-circuit the ignition system or the starting system in an unusual way, it will puzzle the thief and probably frustrate the attempt."

READER AND ADVERTISER

The right sort of an agricultural paper has three rather distinct fields of service: First, it gives its readers reliable information on agricultural matters, crops and crop growing, live stock breeding and feeding, agricultural news of all sorts—in short, everything which relates to the scientific and the practical side of farming. Second, it deals with economic and

Help Your Boy

It is every father's business to advise and help his boy.

To guide and start him out right in life.

Can you help him in any greater way than to find the work for which he is best fitted?

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It points out, suggests, encourages.

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Book Department

THE UTAH FARMER

Lehi, Utah

semi-political questions which have a direct bearing on the welfare of agriculture, and with the social and educational movements of the open country. Third, through its advertising columns, it introduces to its readers the makers and sellers of things which they can use to advantage in carrying on their work more successfully or more easily or more happily.—Wallace's Farmer.

Farmers' Market Place

DUROC BRED SOWS

We are offering a few choice fall gilts, sired by the Grand Champion Richards Defender, and bred to our new giant herd boar, Richards Pathfinder. We purchased Richards Pathfinder in Iowa last December and he is the largest boar of his age we have ever seen. These good gilts will farrow during August and we are pricing them low, as we need the room.

We guarantee to please you or will refund your money and pay the express charges both ways.

RICHARDS LIVE STOCK CO.
Virginia, Idaho

"Home of the Champion Durocs."

FOR SALE

At a bargain one Hart Barr 30-60 tractor, 1915 model, in good working order with gearing new. Horses good as part payment. Apply A. L. Cook, Half Mile West of Lone Rock, 7 Miles West of Tremonton, Utah.

FOR SALE

Eight registered Jersey cows.
Three registered Jersey bulls.
Nine registered Jersey heifers.
Nine pure-bred Jersey cows.
FRANK M. DRIGGS, Ogden, Utah.
Phone 108 Ogden, or 8-J Huntsville, Ut.

FOR SALE

Three young registered Ayrshire cows and one two year old bull. Cows milking and bred. Suitable for small farm. \$100 per head.

E. D. MANN

Brigham

City

40 HEAD HEIFERS

ALL HIGH GRADE HOLSTEINS and Herd Bull FOR SALE

Coming two and threes, mostly threes. First and second calves. All bred to pure bred bull. Prices \$65.00 each head including bull. Selected animals will cost more.

O. L. KITTINGER

Lehi

Utah

Send your order for Butter Wrappers to the Utah Farmer today.

To Buy

IDAHO RANCH BARGAIN

160 Acre cattle ranch, 4 miles from county seat, railroad, etc. All splendid farming land, running water, 50 acres good wheat, 60 res national meadow, fair buildings. Price \$4,700. Good terms.

FEDERAL LAND COMPANY

Ogden

Utah

COMBINED GRAIN AND CATTLE RANCH

Here is an opportunity for some farmer with a small farm and a growing family to make a turn that will make them all wealthy. Two business men, living in Salt Lake City, have been trying to run a ranch by mail. They have decided that they cannot make it pay and now are willing to make the right party a fine proposition. If you have some cash, or if you have a small farm, that you desire to turn in for a first payment, here is the chance of a life time.

The ranch is located within 50 miles of Salt Lake City. It is 2 miles from a R. R. Station on main line, the State Highway passes, the school, church, store, are within 1/4 mile, the telephone line pass, and the Forest Reserve is within 2 miles.

The ranch contains 1608 acres, of which 1560 acres are the choicest kind of "Bench Lands," ideally adapted for "Dry-farming" 600 acres of the "dry-farm" land is cleared and being tilled. There is 48 acres fertile irrigated land with primary water right. The improvements are a 6 room log and frame house, stables, corrals, sheds, granaries, extra good fences, wells, windmill, and 30 acres alfalfa. The personal property consists of a Reg. 7 year old Percheron Stallion, 12 horses and mares, 16 cattle, hogs, chickens. Case Tractor Engine (steam), and full complete outfit of implements, wagons, etc.

The whole proposition can be had for \$18.00 per acre, or \$30,000.00. They want enough cash to make them safe, and will give 10 years on balance at 6 per cent. If you want to trade in other property, let us hear from you.

BURT & CARLQUIST COMPANY
Was. 350 No. 40 So. Main St.
"See Us About Real Estate."

HOMESTEADS

For the best homesteads in Utah, write

GEORGE A. COLE
Monticello, Utah.

ALL TAKEN

Randall—"Going to jail isn't as popular with the suffragettes as it was."
Rogers—"No, all the best cells have been engaged."

FARMS

LIST YOUR PROPERTY HERE IF YOU WANT TO BUY OR SELL

RELIABLE FARM BARGAINS

\$115 per acre will buy you a first-class farm in the Bear River valley, planted in crop this year. Right on the main county road and within one mile of one of the nicest towns in the Bear River valley. We have a number of first-class farms which we are handling for people living in the east, that we can sell from \$115 to \$175 per acre. This land will rent and pay you big interest on the investment if you do not care to farm it yourself.

In the same locality we have eighty acres of land with large barns, good house, eleven acres planted to 12-year-old apple orchard; balance in hay, grain and sugar beets. This property is worth \$200 per acre. This can be had for \$150 per acre, on terms.

In Cache valley we have one of the finest dairy farms, containing 271 acres; 107 acres of irrigated land, balance pasture land. The property is all fenced and under a high state of cultivation. Part of it into fine stand of alfalfa. Improvements consist of one 8-room house, large barn that will hold 50 or 60 head of stock, machine sheds, granaries, hog houses and numerous other outbuildings. This property can be had at the ridiculously low price of \$57 per acre. Ten per cent down, ten years on the balance, 6 per cent interest.

160 acres in Cache valley, with no improvements; under high state of cultivation; first farm watered out of the canal; right near the railroad station; good town and schools; 60 acres of irrigated land, balance first-class pasture land, including some large trees, making excellent shade for the cattle. This farm can be had for \$45 per acre; 10 per cent down, ten years to pay on the balance. If you are looking for a first-class farm, near a good town, in one of the best valleys in this part of the country, this will certainly appeal to you.

Near 14th South, on a 5-cent car line, we have some one-acre garden tracts that we can sell for \$450 per acre.

We have number of large cattle ranches we can sell from \$10 per acre up.

We exchange farm. homes.

Phone Wasatch 963.

KIMBALL & RICHARDS,
"Land Merchants,"

New address—52 and 54 Main street, Salt Lake City, Utah.

\$1,000 PROFIT PER ACRE; GROWING THE ALTON IMPROVED RED RASPBERRY.

\$500 in grand prizes absolutely given away free to my customers. Prizes awarded November 1, 1917, and April 20, 1918. Hardest of all, the most productive of any raspberry known. It commences to ripen its enormous crop July 1st, and continues to bear heavily during the months of July, August and September. Enormous in size, delicious in flavor, beautiful in color. It's a prize winner, the money making king of all. It's as far ahead of the common sorts as the self binder is ahead of the old reap hook. One acre is worth more than 20 to 30 acres of common farm crops. Plants sold with a 3 year guarantee money back if not as represented. If desired 6 months to three years. Let me help you get started in this pleasant and profitable business as I have many others. This berry is highly recommended by Prof. Robert H. Stewart County Agricultural Agent. Only a limited number of plants for sale, could not supply the demand for these plants last season.

Each order filled in its turn. Its just as good to set out plants in the fall as in the spring. Part of the prize contest closes November 1, 1917. Write me at once for free pamphlet telling all about this wonderful berry, also the grand prize contest.

H. A. PINEGAR

Wellington

Utah

To Sell

Your Chance to Make Some Money

And secure a good farm at the same time.

The sale of the entire Elberta Irrigation Project has been postponed by the District Court for 30 days.

Several big successful companies are going to bid on it. Under new management there will be land boom at Elberta.

One company agrees to bring 100 farmers from the Dakotas.

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I have some land that can be secured at a bargain 25 to 50 dollars less than the other land will sell for. It is ideally located. Best kind of land with primary water right. The way to secure a good farm at a low price is to buy now, before this sale is put through.

Can make terms to the right man. It is a real bargain if you want a farm.

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2,000 acres

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Salt Lake City, Utah.



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SEED EMERGENCY AND PRODUCTION

(Continued from page 10)

heads. This enables him to control another wheat smut (loose smut) besides the one he treated for at planting time. It also aids the formalin treatment in the case of oats.

A little later he should cull out other grains, and grain of the same kind if a different variety should have crept in. This process of hand-pulling for cleanliness and for freedom from smut is known as "roguing," and may well continue until it is time to make individual plant selections. At this time, the process already described should be repeated in the seed plot and the selections saved for next year's plot, while the harvest from the entire plot should be saved for sowing the general crop. This requires that the seed plot be large enough to supply all the seed needed on the farm. In a few years, if the farmer will select the best plants and "rogue" his fields, he may offer clean, strong seed for sale at an advanced price.

Corn.

With corn the process is very similar save for the fact that the stalk and not the hill is the individual plant. Since in much of Utah, one of the problems is to get the corn ripe before frost, it is advisable to select the first-ripened stalks. When the first husks turn white, the farmer should, as in the case of the small-grains, pick out a heavy-yielding field and the best part of that field. Let him now select early plants from areas that

have uniform full stands. Total yield of grain is most important; very small ears, suckers, crooked stalks, and malformations of all kinds are objectionable to corn grown for grain. It is of course pre-supposed that the corn is of one variety and adapted to the locality. The husks should be partly stripped back to afford a good view of the ear. An ear well filled at tip and butt, and all over the cob bears more grain than one less completely filled. Deep, close-fitting kernels are also desirable—much more so with dent than with flint varieties. If more than one good-sized ear is borne on the stalk, it is all the better.

In a well-prepared seed-bed—manured on an irrigated farm—the planting should take place as early as safety from frost permits. It is useless to treat seed corn, for smut of corn lives in manure and in the soil—not on the grain. After planting, cultivation to keep down weeds and proper irrigation are about all the care that is necessary except when ears are planted in rows by themselves to be tested individually. The rows are tested against each other for weight of grain.

Potatoes.

Potatoes respond to somewhat similar selection. Some varieties have much higher-yielding possibilities than do others; therefore, the variety chosen is important.

After a good variety is chosen, the next most important thing to consider is disease, which may reduce the yield from 5 to 50, or even 100 per cent. Most diseases can be detected by

examining the tubers. Absolute freedom from disease, if possible, is desired.

Sometimes varieties deteriorate, or "run out." This need not happen if proper selection is practiced. There is a tendency to use or sell the marketable potatoes, thus leaving the small ones for seed. It has been found that potato hills vary a great deal not only in the number of potatoes they produce, but also in the kind. Some hills have from four to eight tubers of much the same size and shape and contain no extremely large ones and not many small ones; others, one large potato and a number of small ones; while still others consist almost entirely of small tubers. Since both very large and very small potatoes are undesirable on the market, hills with a fair number of medium-sized tubers are most desirable.

A set from any potato in the hill tends to produce a hill like the parent hill. A big potato from a poor hill is not so good for seed as a smaller one from a good hill. It seems that all potatoes in a hill are equally valuable for seed. If such is true, there is no objection to using the small potatoes from desirable hills. If, however, small tubers from a bin or pit are used, most of them are likely to be from poor hills.

Seed selection is so simple that every farmer can follow it successfully. The grower will know which part of the patch has the healthiest potatoes. With a digging fork he can

take out a few hundred hills, piling them separately. By examining the piles, he can easily select hills that contain the type he desires. For more technical work, some may desire to study the plants all summer.

Selected seed requires careful storage, and protection from frost and heat. Boxes or crates holding from forty to seventy pounds are convenient, since this method prevents decay of any great number of tubers, and permits quicker shipment.

Forage Crops.

With such crops as alfalfa and the grasses, it is highly important that the seed patches be kept clean. In most cases the actual number of weed plants that occur in the fields is not large. They bear so many seeds, however, that a few weeds often mean a very large number of seed. The fields should be harrowed in fall or spring—perhaps both—to kill the weeds just as they start growth. Then as the season advances some grubbing or hoeing and hand-pulling will clean the fields. Larger yields and better prices for clean seed usually more than pay for this extra labor.

GONE, NOT FORGOTTEN

During the fighting a Highlander had the misfortune to get his head blown off.

A comrade communicated the sad news to another gallant Scot, who asked anxiously:

"Where's his head? He was smoking ma pipe."—Tit-Bits.

INOCULATION OF LEGUMES

There is still some controversy over the value of legume inoculation and some misconception as to the methods. Either a pure culture is to be used or soil distributed over the land from a field which contains the desired organisms. The legume organisms adhere to particles of soil and are waited about by the wind. If a neighboring field is well inoculated with a certain nodule-producing organism this particular organism may be distributed by the wind to an adjoining field, but, it is unwise to presume that any considerable number of individual plants have thereby become inoculated. The organisms which are distributed by the wind may be destroyed by direct sunlight in a few minutes and probably no greater number would find their way to the roots. The legume which is best equipped to maintain itself against adverse conditions is the one which has numerous nodules on its roots. It is therefore desirable that each and every plant in the entire field possess these nodules. If there is a sprinkling of nodule-producing plants over the field they will doubtless spread and eventually the whole field become inoculated, but much loss will be suffered while this process of distribution of organisms is going on. It is essential that we bear continually in mind that these organisms are for the most part specific, that is, the bean requires a particular organism or adaptation form, likewise the pea. Some, such as alfalfa, sweet clover, black medick and bur clover pass over. The true clovers such as the red, white, alsike and crimson do likewise. From this we gather that an adjacent field of field peas would in no sense benefit a field of alfalfa; neither would an adjoining field of clover benefit either alfalfa or field peas. The benefit from organisms circulated by the wind to these fields would therefore be negative. To be certain that each plant is properly inoculated it is therefore desirable that the seed be treated with the proper organism previous to planting. When the roots begin to appear the bacteria will be present and will enter the root hairs, there producing the nodules. If soil containing the organisms is distributed over the ground it must be harrowed in at once. Inoculated soil may also be distributed by means of a seeder. In whatever way the organisms are applied to the field it is plain that before they can be of value to the plant they must come in contact with the roots. While many will doubtless reach this destination from the surface of the soil, yet the process is too slow, considering the price of pure cultures, to be entertained. The idea is to secure a good inoculation as quickly as possible so that the benefit may be at once derived, and we believe that where the seed and the organism are planted together that the prospects of such inoculation are the best possible.—John Putman.

CHILDREN ON THE FARMS

In many farming districts of the state a condition bordering on desperation exists because of a scarcity of labor, and to relieve the situation great numbers of school children have been employed on farms, mainly in thinning beets, work which children soon learn to do well and rapidly. At this work many half grown boys earn nearly or quite as much as their fathers do as laborers or even as mechanics. It is not uncommon for a boy fifteen or sixteen years old to earn three dollars a day, and girls do nearly as well.

So excellent have been the results that have followed the employment of children on the farm that a good many level headed men advise that the opening of the schools in the fall be deferred until the middle of October, in order that the labor of boys and girls may be utilized in harvesting the crops, operating canning factories, etc.

America is at war, a condition

which always makes farm labor scarce, and not only must this country feed its own population but it must furnish food for millions in Europe, else the horrors of famine will be added to those of war. These conditions make it a crime to waste any substance whatever that can be utilized as human food. So where circumstances force a choice between wasting human food and postponing the opening of the schools, school officials should not hesitate. "Save the food," should be their slogan.

It is a mistake to suppose that the time a boy spends at work on a farm is time wasted so far as his education is concerned. On the contrary, many a Utah boy who, for the first time in his life is this summer doing farm work, will derive more benefit from the short period so spent than he could derive from the same amount of time spent in a school house. Muscular exercise, life in the open air, close contact with nature, and the development of manly pride which comes of earning money, will far more than offset the progress he might make in the same time spent in school. Indeed, the chances are that he will the more quickly grasp his lessons in school because of those he has learned from nature. What is here said of a boy applies to a girl, though possibly with lessened force.

Take the city of Payson for example. The new sugar factory there made the labor situation acute. Failure to thin the beets meant the loss of tens of thousands of dollars to that small community. School children of both sexes to the number of a hundred or more were mobilized, organized, instructed and marched every morning to the beet fields. They did their work well and cheerfully, earned good wages, saved the beet crop, and averted threatened calamity. Are they any the worse for the farm work they did? Ask them. Ask their parents. Investigation will prove, that, in different ways, their experience upon the farms was a Godsend to them.

Suppose it were to be prolonged a few weeks, and were made to include driving a mower, raking hay, hauling grain, digging potatoes, working on a threshing machine, and such other kinds of farm work as boys and girls can do; would it hurt the youngsters? Not at all. Is it unladylike for a girl in her teens to drive a team? Not in an emergency. Many of the noblest women that ever lived in Utah, and nobler women never lived at all, drove teams "across the Plains."

Our country is at war, and food must be produced and conserved or consequences a thousand times worse than a postponement of the opening of the schools will ensue.—Deseret News.

WANTED TO GO BACK

"Your honor," said the young lawyer, pausing after an hour's rhetorical pyrotechnics, "I beg your pardon, but do you follow me?"

"I have so far," answered the magistrate, smiling wearily in his chair, "but I'll say frankly, that if I thought I could find my way back I'd quit right here."

HELPS AND HINTS ABOUT

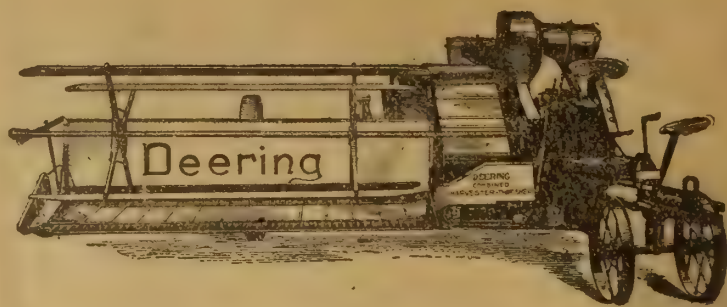
THE FARM

Nothing equals goats for clearing brush on any land you may be getting ready for the plow. The older growth is not only destroyed, but the younger shoots are kept down.

Overhaul the hen house early making all storm proof, as frosted combs and toes will decrease the egg supply. Do not however overlook the matter of proper ventilation and light.

Protect and feed the quail in your wood lot during the winter months as they will more than repay it next spring by destroying unwelcome bugs and worms.

For storm boots and shoes bear in mind, as in the days of our grandfathers, tallow and beeswax melted together and applied warm will turn even snow water.



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